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Editorials

TRADE UNIONISM WHEN APPLIED TO MEDICINE WILL NOT WORK OUT SATISFACTORILY

CO-OPERATION AND DIPLOMACY ARE THE KEYWORDS TO THE SOLUTION OF OUR MEDICAL PROBLEMS

September is known colloquially as the month in which, in a manner of speaking, two great democratic festivals occur.

The most fundamental of these is the reopening of that magnificent American institution, the public school, with its humanizing, civilizing, enlightening opportunities for the humblest in the land. For in the little red schoolhouse or the wonderful granite and brick edifice of education the peal of the liberty bell rings on without ceasing.

The second of these fetes is the national observance of the first Monday of September as Labor Day. Set aside as a memorial to the men and women who have brought under the stars and stripes a more coherent working spirit between capital and labor than exists anywhere under the globe, the significance of Labor Day is monumental. It is one of the few beacons for sanity in the cancer of communism that eats ever at the vitals of civilization. Unlike May 1 demonstrations when red flag shows how vile a red rag can be in thousands of communities and cries aloud for "War, War, More War," this American and September festival is the worker at his constructive best, in such a demonstration of optimism and justice, and at peace with capitalism. It took America to produce such a festival.

There is to the scientific eye inspiration for thought and an appeal to justice over the year's great labor day demonstrations. For economic injustice, economic persecution, economic tyranny, economic interference, economic slaughter forced the working man into the first of those wild and terrific revolts against constituted

authority that wrought havoc and in turn begot similar injustices against the employer.

There is however, no doubt about it, but that the outrages brought results, even in the face of individual sacrifices and martyrdom. Scars left by conflicts of the last quarter of a century have not yet been erased from either individuals or institutions of either class, nor has the perfect pact as yet been achieved. It is all approximate, yet duly prophesied.

Even the scientific eye sees and admits this. And in view of the economic slaughter, economic interference, economic injustice, economic tyranny persecution and bias, now being forced upon the medical profession the scientific mind and the scientific voice may be excused if it asks, "Must medicine, too, fight its people with the trade union spirit?"

Let there be no doubt about it but that if medicine had to, medicine could. Unfortunately the standardization that is a sine qua non for the working out of good trades unionism is an embargo upon the perfect functioning of the trade union spirit in a profession and a science so equivocated by the human element as is the practice of medicine. This has been proven a million times over in those countries where state medicine holds sway. Life and death do not wait upon human schedules. Nature remains the most powerful material god, and, where material manifestations are concerned, nature must be obeyed. The child emerging from the womb will not stay its course because the bell has not rung for childbirth hour. The wearied soul gasping its way into the hereafter stricken with pneumonia or tuberculosis can not be made to pause in its passing because of the workings of an eight-hour day.

No law is a good law that is not reversible. No column of figures is computed correctly if the results are not the same when added up as well as added down. To obtain a competent working economic condition for the medical profession that will give the general public that it serves maximum efficiency is the necessary item over which both public and profession must sit in conference.

State medicine can not do it. As Patrick Henry said so memorably—"It is natural for men to indulge in the illusions of hope . . . . I have no lamp to light my feet except the lamp of experience—I can only judge the future by the past."

With this yardstick state medicine shows up its inadequacies, futilities, paucities. In a flimsy onesided narrow fashion it partially covers a very small section of the question. Not until law made by man becomes greater than nature herself can such misconceived measures do anything else.

The remedy for which the entire situation clamors lies largely in the hands of medicine itself. Every physician realizes the terrific strength and thunderous demands of the problem that sits on the doorstep. Demanding adjustment are relations of ethical medicine with hospitals, dispensaries, universities practicing medicine, corporations practicing medicine, pay and part pay clinics, medical charities, endowed foundations, social service organizations, ill-advised but well meaning philanthropists, and other entities of unscientific, falsely premised effort, of which some exhibit tendencies to dominate situations vitally affecting the medical profession and bearing with menace upon the public health and upon civilization itself.

A branch of this problem of state medicine and its affiliated evils and of economic injustice that must be fought and disciplined by the physicians themselves is the crucial point of the physician abandoning or relinquishing his duty as preceptor, teacher or controlling spirit of medical colleges, institutions and universities, and permitting these tasks, inherently sacred to the medical profession to be taken over by either the less qualified nurse or a lay person. When such tasks include the rendering to patients of services within the scope of medical attendance, or other service such as can be given properly by physicians only, this becomes an actual malfeasance, civic as well as medical.

As lay dictation of medicine under the guise of welfare legislation is alarmingly on the increase through federal centralization the relation of the medical profession to constructive, and even to defensive medical legislation, must become more virile and more genuinely activated than it has been in the past. To this end state medical societies must develop along civic as well as medical and scientific lines, and there must be even more appreciation of the interdependence of organizations interested in mass welfare.

In Illinois organized medicine is now cooperating with more facility than at any time within its history. This is well. It has more

problems and more perplexing ones than ever before.

Some scheme of lowering the cost of medical education, some way of lowering hospital costs and some way of protecting the profession economically are but three of the angles of the situation struck squarely into the eyes of organized medicine while lay dictated control of medicine and hampering lay-wrought medical legislation deal the profession a deliberate foul blow beneath the belt.

Medicine can delay no longer. Inspired by the memory of organized labor's great September celebration there may be a few advanced minds who can be excused for feeling that the time has come for the medical profession to attack the question of medical economics as did the labor leaders of a half century ago. No matter how revolutionary one may feel in his heart, the balance wheel of reason insists that this will not do. Some lessons are too dear at half the price. On the contrary, only the highest of clever diplomacy will straighten out the kinks, the convolutions, the twists and the adhesions. Theoretically medicine must discard all shackles of entangling alliances. The standard must be established. It must be maintained. But because of the nature of the profession this standard cannot be that of trades unionism. Mother Nature remains the despot. The very people who bring about the dire economic straits of the profession today are those, who, if caught in the grist would be the first to cry out, against the work of their own hands.

This does not of course lessen the burden on the medical profession to get its house in order. Co-operation and diplomacy are the keywords. And as in any house-cleaning, "Many hands make light work."

GOVERNMENTAL CONTROL OF PRACTICE OF MEDICINE IS THE LAST STRAW NEEDED TO DESTROY THE USEFULNESS OR EFFICIENCY OF MEDICAL SERVICE

STATE MEDICINE A FAILURE IN ENGLAND

Emphasizing the dangers of the English system of medical care we quote from a recent London letter to the *Journal of the American Medical Association* as follows:

"State Medicine" may be defined generally as the extension of governmental activity in the health field through creating compulsory health insurance or free and pay clinics, or distributing physicians, or seeking complete control of medical practice as a public utility. A few of the many reasons for failure of state medicine in England are:

"1. An enormous expense to the government.

2. It encourages perfunctory and inferior service and inadequate medical treatment. The doctor receives compensation whether his services are good, bad or indifferent. This is a terrible situation for the people.

3. It develops large numbers of neurotics who run to the doctor with any conceivable ailment, whether real or imaginary. It encourages costly malingering.

4. Public dissatisfaction has resulted in an enormous increase in quackery and cultism.

5. The people lose the right of the individual to select his own doctor. This one item should condemn state medicine for the United States. Individual choice of a physician is an inalienable right.

6. It undermines medical initiative, does not recognize merit, forgets the stimulation of medical research and tends to perilize medical progress.

7. It discourages the ambitious youth from the study of medicine and so leaves the field to men of inferior talent."

Doctors of Illinois can look with pride to the part played by the medical profession of the state in helping to prevent the establishment of compulsory health insurance in America. Our activities along this line dates back to the years 1919-1920-1921. We felt then and still feel that governmental control of the practice of medicine is the last straw needed to destroy the usefulness or efficiency of medical practice. Inauguration of compulsory health insurance or any other scheme providing for state medicine would inaugurate a regime of red tape, graft and political tightrope gymnastics that would put to shame the present day political control of civic affairs. Overstandardization and over centralization of affairs in Washington will prove a perilous experiment in the care of the sick.

WHAT WOULD THE CAPTAINS OF INDUSTRIES SAY IF THE MEDICAL PROFESSION ATTEMPTED TO MEDDLE WITH THEIR AFFAIRS?

Dr. Edward H. Ochsner of Chicago, an outstanding authority on medical economics, in a recent talk before the North Shore Branch of the Chicago Medical Society made some very pertinent remarks relative to some present dangers to medicine. We quote:

"That next to stability of government, honesty of administration and the general intelligence of the people, the welfare of the nation depends more upon the quality of medical service which is rendered to the people than upon any other one thing.

"The longevity, health, efficiency and happiness of the people depend more upon the integrity, ability and industry of its medical profession than upon anything else.

"The allied professions of medicine, dentistry and pharmacy are today giving the American man who is loyal to his country to fight to the any nation has ever had in the history of the world.

"If the above three postulates are true, then it is the plain duty of every physician to see to it that the present standard of medical efficiency is maintained, and the part of wisdom of every layman to encourage the regular medical profession so that it can maintain this standard and gradually make further improvements in order that the citizens of this country may enjoy the greatest possible degree of health, and it is the plain logical duty of every red blooded medical man who is loyal to his country to fight to the last ditch to prevent the socialization of medicine or its control by lay monopolists.

"The purpose of the study of economics is to safeguard and promote the material resources of a nation or a group within a nation. The study of medical economics has for its primary object the safeguarding and promoting of the material welfare of the medical profession, and for its secondary object the promoting of the general welfare of all the people.

"The main dangers to medicine as he sees them are:—Lack of balance between the main divisions of medicine; too great specialization with resulting relative over-emphasis on the non-essentials; petty jealousies within the profession itself; misinformation of the true purpose of medical charity; misinformation as to the cost of being sick; misinformation as to the quality of medical service rendered to the man in moderate circumstances; misinformation as to the qualifications of the average medical man; and lay and political domination and control of the practice of medicine.

"The man who once accepts charity, particularly if it is not a case of dire necessity, is not quite as fine a man as he was before. He has lost something that nothing can replace. Many of the innumerable charitable organizations in existence are doing more, and have done more, to undermine character than can ever be evaluated; consequently, it is a serious question whether or not many of them have not actually done more harm than good.

"It is far better to be a little hungry, a little cold, or even a little sick physically than to have lost one's self-reliance and self-respect and to have become a human parasite. Parasitism is today the corroding canker of American life and nothing has fostered this more than unwise medical charity.

Misinformation as to the Cost of Being Sick

"The onus of the increased cost of being sick is being placed upon the shoulders of the medical profession most unjustly; instead it should be placed upon the hospitals, and the public in general, where it justly belongs.

Misinformation as to the Quality of Medical Service Rendered to the Man in Moderate Circumstances

"Another common assertion is that the man with a moderate income is not getting adequate medical service. This statement is essentially untrue. The man of moderate income is on the average getting better medical service than the very poor and the very rich. Probably not so much paraphernalia is employed in treatment, nor does he receive so many fancy and unnecessary laboratory tests and examinations, but he is getting the essentials to make him well, or keep him well.

Misinformation as to the Qualifications of the Average Medical Man

"Another statement which one often hears is that the average practitioner of medicine is incompetent. This is equally untrue. No other group has rendered a greater service to society, for it has given good health and length of life, two of the greatest blessings man can possess, to an ever increasing number of men and women.

"What would the captains of industry say if the medical profession attempted to meddle with their affairs? Frankly, the medical profession has solved its problem more nearly and more satisfactorily than the industrialists. Frankly again, captains of industry had better pay higher wages or take smaller profits rather than acquire great fortunes and use them in pauperizing the public.

"American medicine is facing a crisis today such as it has not faced in our day and generation and probably not in its history, a crisis towards which many of us have realized that it was slowly drifting. The question today is—shall medicine continue in the the "straight and narrow path" which it has followed throughout the centuries, or shall it deviate therefrom and permit lay domination and control to direct it? There is no other group of men who have persistently maintained such high ideals both in theory and in practice, and a concerted effort is being made by misinformed laymen to destroy these ideals.

"He is a firm believer in the doctrine that right always triumphs provided only that it is defended with the same vigor, intelligence, determination and persistence with which wrong is usually championed. The medical profession being in the right will be able to defeat those who are unwittingly or selfishly working for the socialization of medicine, state medicine and monopoly controlled medicine all of which are identical in their effect."

KIND WORDS FOR THE DOCTOR

Much has been said, but not too much, concerning the Doctor and his part of the program in the processes of the social structure and lest we forget, some repetition will not be amiss at a time when the cry is being raised that he is responsible for the high cost of medical care.

To prepare himself under the law safeguarding the public, he is required to spend more time and money in his preparation to serve humanity than any other professional man. The very nature of this preparation, step by step, its safeguards with forced clinical experience before he may offer to serve, precludes his experimenting upon society while his life work is at its beginning.

There is little financial reward to him in his months of research but multiple in benefit are his efforts in behalf of mankind. The results of his findings are freely passed on in directing public health movement and clinical offerings.

Those directing the policies of medicine and its organizations are forced by drastic means to restrain the unscrupulous, who would commercialize human life and all its attributes. The critic who censures the seeming iron rule and what is called close corporation methods is either ignorant of general welfare or is hampered in same selfish project by the well directed control.

Should not those who know express a depth of gratitude, a testimonial to those directing influences which so thoroughly guard the very lives of loved ones and take on even national scope, and in proof of our sincerity, give hearty support and cooperation in movements featuring an extension of constructive self preservation.

The laborer is worthy of his hire; first called he is generally last paid and *statistics show that his part in the total expended on average sickness is only 20%*. Life is sweet and to the guardians of its destinies we owe recognition of general worth, also to those groups who by their own efforts in monies and time seek to consistently raise standards that they may serve humanity intelligently.

The Doctor is the General who directs the fight; the fight for life, he makes the decisions of great moment, he lives thro the crisis with the patient and the family and 'tis he who sorrows in all sincerity when the mystery of death encroaches. Knowing the mysteries of life and death, where unknown equations affect the result he must be brave to assume command and to assist at this critical time he must be freed from minor cares, must be encouraged to a clear mental attitude that he may serve to better purpose and by giving him that which costs but little, a sincere understanding, we cast bread

upon the waters which returns if not to us, to fellow man.

The very close observance by him of the ethical code bespeaks his sincerity—we who know him best are willing to testify as stated, also realizing that he is human, believe it or not, these are the facts and not flattery.—*Chicago Retail Druggists' Assn.*

HOBBIES OF MEDICAL MEN—DOCTORS WHO HAVE ACHIEVED FAME IN OTHER FIELDS THAN MEDICINE

Dr. William Barnes—Entomology*

Anyone who has ever scanned closely a lovely vagrant golden butterfly poised on a June day above an alabaster lily cup has felt the reason why the classic Greeks chose this lovely insect as the emblem of the soul—the Psyche.

Those who knew best the late Dr. William Barnes of Decatur, Ill., busied with the multifarious material duties of a neighborhood physician, can understand how he found rest indeed in his avocation of collecting butterflies.

Scientists the world over paid homage to Dr. Barnes and his butterflies. He was not "building a better mouse-trap," this great man in a small community, but he was building up what is recognized as the greatest collection in existence of North American lepidoptera.

"Willy" Barnes was only five years old when he first began to collect flies and insects. He loved them for the magic beauty of their wings, their gossamer texture, their brilliant eyes. Later butterflies began to allure the dreamy, poetic child. At Harvard University, where he took his B. S. degree in 1883 prior to entering Harvard University Medical School, the young man had the great good fortune to come into contact with the great Agassiz. From this acquaintance, among other things, the young man learned the value both of making a collection of insects and of having it arranged systematically. After receiving his sheepskin in 1886, Dr. Barnes served an interneship in the Boston City hospital going thence to Europe for post graduate work at Heidelberg, Munich and Vienna. All this while he managed to keep on collecting butterflies. In later years he found it necessary to have others do much of the actual work for him but he spared himself neither trouble nor expense to have brought to him specimens from many remote places of both North America and Europe. Many a man has been sent to far far places to bring back certain types.

Naturally enough the analogous collecting and preservation of flowers and especially of wildflowers was another hobby of Dr. Barnes and here, too, he was considered an authority.

Before his death Dr. Barnes' collection had grown so large and so valuable that for the housing of it, the physician had constructed a special fireproof addition to his residence in Decatur. Further, since his passing, a curator has been retained to look after the collection and to file new specimens. Scientists from all over the globe call at the Barnes Museum as it were to view his wonderful collection with its more than 500,000 specimens of butterflies and moths. June 13, 1930, President Hoover requested from the House an appropriation of $50,000 to enable the secretary of agriculture to purchase this collection, for obvious and scientific reasons. Government experts are said to value the collection at $1,000,000.

This is not the first time that the collection has been heard of in the national capital. The butterflies made a flying trip into politics in 1922 when Allen F. Moore of Monticello, then the congressman from that district, introduced a bill for the purchase of the collection for a total of $300,000 and an additional $10,000 for the cost of the collection's transportation to the Smithsonian Institute at Washington. This bill was never passed.

Some three years ago when an effort was made to purchase this collection and on behalf of foreign interests the *St. Louis Post Dispatch* carried an article commenting on the necessity for having some American trust, such as the Rockefeller foundation, purchase the collection. About that time it was further stated that the Barnes' collection is so complete and protean that it should be used as a basis for a national collection and sent to the national museum.

Dr. Barnes died May 1, 1930. Disposition of the collection of this capable physician and excellent citizen is not as yet announced.

Dr. Barnes was a fellow of the American College of Surgeons and a member of twelve influential scientific and entomological associations and societies, the American Medical Association, American Association for Advancement of

*A posthumous appreciation; Dr. Barnes died May 1, 1930.

Science, Illinois Medical Society, American Entomological Society, American Association of Economic Entomology, Entomological Societies of France, London, New York, Brooklyn and Washington, the Macon County Medical Society and the Illinois Academy of Science. He belonged to the Decatur Club, the University Club, the Elks Club, the South Side Country Club and the City Club all of Decatur. He was a member of the Harvard clubs of New York City and of Chicago and of the University Club of Chicago and of the Central Illinois Golf Association for which he had served as president.

In 1890 Dr. Barnes married Charlotte L. Gillett of Elkhart, Illinois. They had two children, William A. Jr., and Gillette Barnes now Mrs. Selim McArthur, and herself now the wife and daughter-in-law as well as daughter of a doctor.

Dr. Barnes began the practice of medicine in Decatur, Ill., from the very first he was known as one of the most prominent physicians of that locality and he became one of the well known surgeons of the state. He took care of his private practice and was concerned over the affairs of the community in which he lived and took an active part in them. His efforts were largely responsible for the Decatur and Macon County Hospital. Dr. Barnes was one of the first people to be interested in the forming of a country club in Decatur, he was also a Trustee of the Community Chest.

Among the thoughtful kindnesses performed by Dr. Barnes unbeknown was that each year from him members of the Decatur nurses' graduating class received their bouquets worn at the commencement exercises. The superintendent of nurses too was always remembered by receiving a bouquet made up of her school's flowers.

The large wild flower gardens at the Decatur and Macon County Hospital were planted under his direction and at his expense.

No shaft of marble, no sarcophagus of granite can ever do more for the memory of Dr. Barnes than the white hyacinths that he strewed so liberally by the wayside. Decatur will always love as well as honor him. He was their native son—the child of William A. and Eleanor Sawyer Barnes, born Sept. 3, 1860. He went to the grade schools in Decatur and in 1877 when he was graduated from the Decatur High school he had the honor of being salutatorian. Next year he went to the Illinois State Normal and then he had a year at the University of Illinois before going to Harvard.

He was a true Illinoisan. He had greatness and all the world to welcome him, but loyally and graciously, and in the flush of youth, he turned and brought his gifts back home. He made his native habitat his world, and so, brought the world to his native habitat.

EDUCATIONAL COMMITTEE

Activities for June, July, August

Speakers Bureau:

16 Appointments filled.

27 Appointments scheduled for future dates.

Letters stating that speakers might be secured for Teachers Institutes were sent to County Superintendents of Schools.

We expect to arrange a series of health talks for the Englewood Y. M. C. A.

The West Chicago Young Mothers Club, for the third consecutive year, have asked for speakers to present health talks at five of their fall and winter meetings.

Letters sent to Principals of High Schools offering services of Educational Committee in observing Health Day of American Education Week.

Doctor Andy Hall believes that health talks and health articles in newspapers are bringing results. About 1,100 babies were examined at the State Fair. One out of every 3 babies had been immunized against diphtheria. In 1929 only one out of ten had been immunized.

Radio:

26 Health talks given at noon over WGN and WJJD:

Hay Fever—S. M. Feinberg.

Present Day Views of Goiter — David C. Straus.

Diseases of the Stomach—Jacob Meyer.

Keep Well When Vacationing — A. H. R. Kreuger.

Why the Medical Profession Is Opposed to the Sheppard-Towner Law—Charles E. Humiston.

Bronchial Asthma and Hay Fever — S. J. Taub.

Diseases of the Blood—R. H. Jaffe.

The Heart—Charles Wiley.

Early Symptoms and Minor Injuries—Marcus J. Hobart.

Focal Infections—Emil J. Stein.

Remote Effect of Girlhood Infections—E. B. Herdman.

Convergent Squint in Children—W. F. Moncreiff.

Infantile Paralysis.

Diarrhea or Colitis—M. H. Streicher.

What Are Gallstones—G. L. McWhorter.

Keeping Fit Through the Liver—John B. Haeberlin.

What Is Cancer—Aaron Arkin.

Sinus Infections and Swimming—C. H. Christoph.

Indigestion—Percy Hopkins.

Summer Vacations.

Occupation in Relation to Heart Disease—C. C. Maher.

Care of the Skin in Summer—C. W. Finnerud.

Infantile Paralysis—Silber C. Peacock.

Prenatal Care—R. C. Oldfield.

Common Deformities of Childhood—Robert O. Ritter.

Goiter—Earle I. Greene.

78 Health talks have been given under the auspices of the Illinois State Medical Society and the Chicago Pediatric Society. Station WJJD at 11:15 Daylight Saving Time.

The members of the Educational Committee have carefully checked over these 104 radio papers.

Press Service:

1,275 Articles mailed in our regular press service.

42 Articles mailed about Rock Island County Medical meeting.

58 Articles mailed about Madison County Medical meetings.

65 Articles on the importance of Correction of Defects in the Pre-School Child sent to communities sponsoring Summer Round-Up.

616 Articles mailed about the Summer Clinics sponsored by the Chicago Medical Society.

28 Health Articles written and approved by the Committee:

The Fourth of July.
Safe Swimming.
Summer.
Beware of Stray Dogs.
Infantile Paralysis.
Your Nails.
Food Poisoning in Hot Weather.
The Bell Rings for School.
Some Common Deformities of Childhood.
Seasonal Skin Disorders.
Diphtheria May Be Prevented.
Malaria Prevalent.
Sciatica.
Hernia.
Ivy Poisoning.
Varicose Veins and Phlebitis.
Sweets for Children.
How Do You Sleep?
Foot Troubles.
Sores in the Mouth.
Keeping the Baby Well in Summer.
Typhoid Fever May Be Prevented.
High Temperature Affliction.
Diarrhea or Colitis.
Trachoma in Illinois.
The X-Ray and Disease.
Rectal Ailments.
Pain in the Abdomen.

We made our annual check up of newspapers this spring to find out if our service was satisfactory. Service seems to be appreciated by editors. In order to find out if a question and answer column was desired, we included in our form this question, "Would you be interested in having a question and answer service in connection with the health column?" Out of over forty replies only six editors stated that they would want it.

Miscellaneous:

5 Moving Picture films secured.

23 Package Libraries loaned.

150 Package Libraries revised and new material added.

Organizations:

Woman's Auxiliary:

We have compiled package libraries on the following subjects which we felt might be of interest to the Auxiliaries,

State Medicine.
Medical Ethics.
Hospitals and Nursing.
Medical Problems.
Public Health.
Cost of Medical Care.

Illinois Congress of Parents and Teachers:

335 Summer Round-Up registrations in 1930

as compared with 158 in 1929 and 5 in 1925.

Articles sent from this office to all newspapers in communities sponsoring the Summer Round-Up. Letters sent to presidents and securities of County Medical Societies.

The following portion of a letter received from Mrs. C. W. Balch, State Chairman of Summer Round-Up for the Illinois Congress of Parents and Teachers, shows the very splendid spirit prevailing at least among the officers of that organization:

"I do appreciate your fine spirit of helpfulness and cooperation and thank you for your continued interest and support. If at any time you have suggestions to make, please feel free to make them for you are in a position to pass on suggestions and I assure you that they will be thankfully received. We all hope that the follow-up will be successful. If you have any promotional ideas for encouraging mothers to keep on until the corrections are made, we will be only too happy to receive any help along this line."

Chicago Commons:

Asked for help with some health programs this summer. We furnished speakers, films, and literature.

Scientific Service:

13 Appointments made for scientific talks before medical societies. Several appointments scheduled for September and October.

JEAN MCARTHUR,
Secretary.

ANNUAL MEETING OF INTER-STATE POST GRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

The International Assembly of the Inter-State Postgraduate Medical Association of North America will be held at the Municipal Auditorium, Minneapolis, Minnesota, October 20-21-22-23-24, 1930.

Monday, October 20, 7:30 A. M.

Diagnostic Clinic (Surgical).
Dr. Hugh Cabot, Consulting Surgeon, Mayo Clinic, Rochester, Minn.

Diagnostic Clinic (Oto-Laryngological).
Dr. Samuel J. Kopetzky, Professor of Otology, New York Polyclinic Medical School and Hospital, New York, N. Y.

Diagnostic Clinic (Surgical).
Dr. Alfred T. Bazin, Professor of Surgery, McGill University Faculty of Medicine, Montreal, Can.

Diagnostic Clinic (Gynecological).
Dr. John O. Polak, Professor of Obstetrics and Gynecology, Long Island College Hospital, Brooklyn, N. Y.

Intermission for Review of Exhibits

Diagnostic Clinic (Surgical).
Dr. Donald C. Balfour, Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Motion Talking Picture: "Cesarean Section."
Dr. Joseph B. DeLee, Professor of Obstetrics, Northwestern University Medical School, Chicago, Ill.
Picture presented by
Dr. M. Edward Davis, Assistant Professor of Obstetrics and Gynecology, Rush Medical College of the University of Chicago, Chicago, Ill.

Noon Intermission

Diagnostic Clinic (Medical).
Dr. Henry A. Christian, Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic (Surgical).
Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University School of Medicine, Nashville, Tenn.

OBSTETRICS

Address: "The Composition of the Blood in Pregnancy with Special Relation to the Calcium Content."
Dr. Otto H. Schwarz, Professor of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Mo.

Address: "Pregnancy in the Presence of Uterine Tumors."
Dr. Edmund B. Piper, Professor of Obstetrics, University of Pennsylvania School of Medicine, and Graduate School of Medicine of the University of Pennsylvania, Philadelphia, Pa.

Address: "An Analysis of One Thousand Consecutive Labors with the Child Presenting in an Obliquely Posterior Position."
Dr. John W. Williams, Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore, Md.

Intermission for Review of Exhibits

OBSTETRICS (CONTINUED)

Address: "The Toxemias of Pregnancy from the Standpoint of the General Practitioner."
Dr. P. Brooke Bland, Professor of Obstetrics, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Address: "Prenatal and Post-natal Care in Obstetric Practice."
Dr. William B. Hendry, Professor of Obstetrics and Gynecology, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: "Clinical Types of Nephritis."
Dr. Henry A. Christian, Professor of the Theory

and Practice of Physic, Harvard University Medical School, Boston, Mass.

Address: "Visceral Pain."

Dr. Robert D. Rudolf, Professor of Therapeutics, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: "The Relationship of Disorders of the Digestive Tract to Anemia."

Dr. William B. Castle, Assistant Professor of Medicine, Harvard University Medical School, Boston, Mass.

Dinner Intermission

7:00 P. M.

OTO-LARNGOLOGY

Address: "Tonsillectomy—When?"

Dr. Fielding O. Lewis, Professor of Laryngology, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Address: "Acute Systemic Infections of Otitic Origin."

Dr. Samuel J. Kopetzky, Professor of Otology, New York Polyclinic Medical School and Hospital, New York, N. Y.

Address: "The Salivary Glands."

Dr. William V. Mullin, Head of the Department of Oto-Laryngology, Cleveland Clinic, Cleveland, Ohio.

Address: "Cardiospasm."

Dr. Harris P. Mosher, Professor of Laryngology, Harvard University Medical School, Boston, Mass.

Address: "Surgery of the Pharynx."

Dr. Arnold Schwyzer, St. Paul, Minn.

Address: "The Treatment of Varicose Veins."

Dr. Alfred T. Bazin, Professor of Surgery, McGill University Faculty of Medicine, Montreal, Can.

Address: "The Relative Values of Irradiation and Operation in the Treatment of Uterine Tumors."

Dr. John O. Polak, Professor of Obstetrics and Gynecology, Long Island College Hospital, Brooklyn, N. Y.

Address: "Non-Operative Treatment of Retroversion of Uterus especially in connection with Pregnancy."

Dr. George H. Ryder, Clinical Professor of Obstetrics, Columbia University College of Physicians and Surgeons, New York, N. Y.

Tuesday, October 21st, 7:30 A. M.

Diagnostic Clinic (Surgical).

Dr. Edward W. Ochsner, Professor of Surgery, Tulane University of Louisiana School of Medicine, New Orleans, La.

Diagnostic Clinic (Urological).

Dr. William E. Lower, Director, Cleveland Clinic Foundation; Associate Professor of Genito-Urinary Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

Diagnostic Clinic (Surgical).

Dr. Carl A. Hedblom, Professor of Surgery University of Illinois College of Medicine, Chicago, Illinois.

Diagnostic Clinic (Urological).

Dr. William F. Braasch, Professor of Urology, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Intermission for Review of Exhibits

Diagnostic Clinic (Medical).

Dr. Harlow H. Brooks, Professor of Clinical Medicine, University and Bellevue Hospital Medical College, New York, N. Y.

Diagnostic Clinic (Pediatric).

Dr. Alan G. Brown, Associate Professor of Pediatrics, University of Toronto Faculty of Medicine, Toronto, Canada.

Diagnostic Clinic (Surgical).

Dr. Dallas B. Phemister, Professor of Surgery, Rush Medical College of the University of Chicago, Chicago, Ill.

Noon Intermission

Diagnostic Clinic (Urological).

Dr. William C. Quinby, Clinical Professor of Genito-Urinary Surgery, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic (Surgical).

Dr. Irvin Abell, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky.

Address: "The Causes and Treatment of Some of the Circulatory Failures in Surgery."

Dr. Dallas B. Phemister, Professor of Surgery, Rush Medical College of the University of Chicago, Chicago, Ill.

UROLOGY

Address: "Renal Tumors."

Dr. William C. Quinby, Clinical Professor of Genito-Urinary Surgery, Harvard University Medical School, Boston, Mass.

Address: "Silent Lesions of the Genito-Urinary Tract."

Dr. William E. Lower, Director, Cleveland Clinic Foundation; Associate Professor of Genito-Urinary Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

Intermission for Review of Exhibits

UROLOGY (Continued)

Address: "Stricture of the Ureter."

Dr. William F. Braasch, Professor of Urology, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address: "Transplantation of the Ureters."

Dr. Robert C. Coffey, Clinical Professor of Surgery, University of Oregon Medical School, Portland, Oregon.

Address: "Tuberculous Disease of the Kidney."

Mr. Henry Wade, F. R. C. S., Surgeon, Royal Infirmary, Edinburgh; Senior Lecturer in Clinical Surgery, University of Edinburgh, Edinburgh, Scotland.

RESPIRATORY TRACT

Addess: "The Treatment of Pneumonia."
Dr. Alvah H. Gordon, Associate Professor of Medicine, McGill University Faculty of Medicine, Montreal, Canada.

Address: "The Surgical Treatment of Pulmonary Tuberculosis."
Dr. Carl A. Hedblom, Professor of Surgery, University of Illinois College of Medicine, Chicago, Illinois.

Address: "The Treatment of Empyema."
Dr. Edward W. Ochsner, Professor of Surgery, Tulane University of Louisiana School of Medicine, New Orleans, La.

Dinner Intermission

7:30 *P. M.*

Address: "The Choice of Anesthesia with Particular Reference to the Rights of the Patient."
Dr. Hugo Cabot, Consulting Surgeon, Mayo Clinic, Rochester, Minnesota.

Address: "The Periodical Physical Examination."
Dr. Harlow H. Brooks, Professor of Clinical Medicine, University and Bellevue Hospital Medical College, New York, N. Y.

ESOPHAGUS AND STOMACH

Address: "The Treatment of Gastric and Duodenal Ulcer."
Dr. Donald C. Balfour, Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address: "Surgical Aspects of Chronic Dyspepsia."
Dr. Irvin Abell, Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky.

Address: "The Practical Control of Gastric Motility."
Dr. T. Wingate Todd, Henry Wilson Payne Professor of Anatomy, Western Reserve University School of Medicine, Cleveland, Ohio.

Address: "The Location of Metastases from the Genito-Urinary Tract and from the Thyroid Gland."
Dr. Bernard H. Nichols, Head of the Department of Roentgenology, Cleveland Clinic, Cleveland, Ohio.

Address: "Abdominal Surgery and the General Practitioner."
Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University School of Medicine, President of the Inter-State Postgraduate Medical Association of North America, Nashville, Tenn.

Wednesday, October 22nd, 7:30 A. M.

Diagnostic Clinic (Pediatric).
Dr. Isaac A. Abt, Professor of Pediatrics, Northwestern University Medical School, Chicago, Ill.

Diagnostic Clinic (Surgical).
Dr. Charles H. Mayo, Associate Chief of Staff, Mayo Clinic; Professor of Surgery, University of Minnesota, Graduate School of Medicine, Rochester, Minnesota.

Diagnostic Clinic (Medical).
Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic (Surgical).
Dr. John B. Deaver, Emeritus Professor of Surgery, University of Pennsylvania School of Medicine, and Professor of Surgery, Graduate School of Medicine of the University of Pennsylvania, Philadelphia, Pa.

Intermission for Review of Exhibits

Diagnostic Clinic (Pediatric.)
Dr. Fritz B. Talbot, Clinical Professor of Pediatrics, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic (Surgical).
Dr. Nathaniel Allison, Professor of Surgery, Rush Medical College of the University of Chicago, Chicago, Illinois.

Diagnostic Clinic (Surgical).
Dr. Dean D. Lewis, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Noon Intermission

Diagnostic Clinic (Surgical).
Dr. John F. Erdmann, Professor of Surgery, New York Post-Graduate Medical School, New York, N. Y.

Address: "The Eye-Grounds in General Diagnosis." The Joseph Schneider Foundation Presentation.
Dr. Frank E. Burch, Professor of Ophthalmology and Oto-Laryngology, University of Minnesota School of Medicine, Minneapolis, Minn.

Address: "The Treatment of Hernia."
Dr. John B. Deaver, Emeritus Professor of Surgery, University of Pennsylvania, School of Medicine, and Professor of Surgery, Graduate School of Medicine of the University of Pennsylvania, Philadelphia, Pa.

Address:
Dr. A. H. M. J. Van Rooy, Professor of Obstetrics and Gynecology, Medical Department of the University of Amsterdam, Amsterdam, Holland.

Address: "Psychoses of Different Age Periods."
Dr. William A. White, Professor of Psychiatry, George Washington University Medical School, and Professor of Mental and Nervous Diseases, Georgetown University School of Medicine, Washington, D. C.

Intermission for Review of Exhibits

FRACTURES

Address: "Operative Treatment of Fractures."
Dr. Charles L. Scudder, Assistant Professor of Surgery, Harvard University Medical School, Boston, Mass.

Address: "Fracture of the Shoulder."
Dr. Paul B. Magnuson, Assistant Professor of Surgery, Northwestern University Medical School, Chicago, Illinois.

Address: "Fractures Involving the Foot and Ankle Joint."
Dr. Fraser B. Gurd, Lecturer in Surgery, McGill University, Faculty of Medicine, Montreal, Can.
Address: "Infections and Their Treatment."
Dr. Dean D. Lewis, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Dinner Intermission

7:30 *P. M.*

Address: "Relationship of the Eye to General Disease."
Dr. Charles H. Mayo, Associate Chief of Staff, Mayo Clinic; Professor of Surgery, University of Minnesota, Graduate School of Medicine, Rochester, Minn.
Address: "Unclassified Glycosurias—Their Significance and Outcome."
Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard University Medical School, Boston, Mass.

PEDIATRICS

Address: "Fetal Peritonitis and Sequelae."
Dr. Isaac A. Abt, Professor of Pediatrics, Northwestern University Medical School, Chicago, Ill.
Address: "The Prevention and Treatment of Rickets with Especial Relation to the Value of Sunshine."
Dr. Alan G. Brown, Associate Professor of Pediatrics, University of Toronto Faculty of Medicine, Toronto, Canada.
Address: "The Dietary Treatment of Epilepsy in Children."
Dr. Fritz B. Talbot, Clinical Professor of Pediatrics, Harvard University Medical School, Boston, Mass.

ORTHOPEDICS

Address: "Infectious Arthritis."
Dr. Nathaniel Allison, Professor of Surgery, Rush Medical College of the University of Chicago, Chicago, Illinois.
Address: "Ankylosing Operations for the Relief of Lumbo-Sacral and Sacro-Iliac Pain."
Dr. Edwin W. Ryerson, Professor of Orthopedic Surgery, Northwestern University Medical School, Chicago, Illinois.
Address: "Pott's Disease—Symptoms and Treatment."
Dr. William G. Turner, Clinical Professor of Orthopedic Surgery, McGill University Faculty of Medicine, Montreal, Canada.
Address: "Relaxed Knees and Torn Crucial Ligaments and the Disability following such an Injury."
Dr. George E. Bennett, Associate Professor of Clinical Orthopedic Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Thursday, October 23, 7:30 *A. M.*

Diagnostic Clinic (Surgical).
Dr. Burton J. Lee, Professor of Clinical Surgery, Cornell University Medical College, New York, N. Y.
Diagnostic Clinic (Medical).
Dr. Elsworth S. Smith, Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Mo.
Diagnostic Clinic (Surgical).
Dr. Frank H. Lahey, Director, Lahey Clinic, Boston, Mass.
Diagnostic Clinic (Medical).
Dr. Emanuel Libmann, Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons, New York, N. Y.

Intermission for Review of Exhibits

Diagnostic Clinic (Surgical).
Dr. Walter E. Dandy, Associate Professor of Clinical Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.
Diagnostic Clinic (Medical).
Dr. Charles A. Elliott, Professor of Medicine, Northwestern University Medical School, Chicago, Illinois.
Diagnostic Clinic: "The Diagnosis and Selection of Cases for Sympathetic Ganglionectomy and Trunk Resection in the Treatment of Peripheral Vascular Diseases."
Dr. Alfred W. Adson, Associate Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.
and
Dr. George E. Brown, Associate Professor of Medicine, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Noon Intermission

Diagnostic Clinic (Medical).
Dr. John H. Musser, Professor of Medicine, Tulane University of Louisiana School of Medicine, New Orleans, La.
Diagnostic Clinic (Surgical).
Dr. E. Starr Judd, Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, President-Elect American Medical Association, Rochester, Minn.
Address: "Types and Treatment of Rheumatism."
Dr. Russell L. Haden, Chief of the Medical Division, Cleveland Clinic, Cleveland, Ohio.

DERMATOLOGY

Address: "The Differential Diagnosis of Syphilitic and Non-Syphilitic Eruptions."
Dr. Howard Fox, Professor of Dermatology and Syphilology, University and Bellevue Hospital Medical College, New York, N. Y.
Address: "X-ray Treatment of Skin Malignancies."
Dr. James M. Martin, Professor of Radiology, Baylor University College of Medicine, Dallas, Tex.

Intermission for Review of Exhibits

CIRCULATORY SYSTEM

Address: "Coronary Thrombosis and its Sequelae."
Dr. Emanuel Libman, Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons, New York, N. Y.
Address: "The Treatment of Essential Hypertension."

Dr. Elsworth S. Smith, Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Mo.

Address: "X-ray Examination of the Heart and Aorta."

Dr. George W. Holmes, Assistant Professor of Roentgenology, Harvard University Medical School, Boston, Mass.

Address: "The Diagnosis and Treatment of Pericarditis—The Cardiac Condition Most Frequently Missed."

Dr. Charles S. Williamson, Professor of Medicine, University of Illinois College of Medicine, Chicago, Illinois.

Address: "Anemias Simulating Pernicious Anemia."

Dr. John H. Musser, Professor of Medicine, Tulane University of Louisiana School of Medicine, New Orleans, La.

Dinner Intermission

7:30 *P. M.*

MALIGNANT DISEASES

Address: "Surgery and Irradiation in the Treatment of Mammary Cancer."

Dr. Burton J. Lee, Professor of Clinical Surgery, Cornell University Medical College, New York, N. Y.

Address: "Cancer of the Stomach."

Dr. Frederick N. G. Starr, Professor of Clinical Surgery, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: "Cancer of the Rectum."

Dr. John F. Erdmann, Professor of Surgery, New York Post-Graduate Medical School, New York, N. Y.

Address: "Reconstructive Surgery of the Face," illustrated by colored motion picture.

Dr. Joseph E. Sheehan, Professor of Plastic Surgery, New York, Post-Graduate Medical School, New York, N. Y.

INDUSTRIAL MEDICINE AND SURGERY

Address: "Underlying Principles of Traumatic Surgery."

Dr. John W. Martin, Vice-President and Director of the Surgical Department, U. S. Fidelity and Guarantee Company, Baltimore, Md.

Address: "Industrial Toxemias."

Dr. Jean S. Millard, Goodyear Rubber Company, Akron, Ohio.

Address: "Preventive Medicine in Industry."

Dr. Cassius H. Watson, American Telephone and Telegraph Company, New York, N. Y.

Address: "Industrial Surgery as a Specialized Field."

Dr. Roy D. McClure, Surgeon-in-Chief, Henry Ford Hospital, Detroit, Michigan.

Address: "End Results of Fractures in Industry."

Dr. Loyal A. Shoudy, Chief Surgeon, Bethlehem Steel Company, Bethlehem, Pennsylvania.

Friday, October 24, 7:30 A. M.

Diagnostic Clinic (Medical).

Dr. David P. Barr, Professor of Medicine, Washington University School of Medicine, St. Louis, Missouri.

Diagnostic Clinic (Surgical).

Dr. George W. Crile, Director, Cleveland Clinic Foundation; Professor Emeritus of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

Diagnostic Clinic (Medical).

Dr. Leonard G. Rowntree, Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Diagnostic Clinic (Surgical).

Dr. Arthur Dean Bevan, Clinical Professor of Surgery and Head of Surgical Department, Rush Medical College of the University of Chicago, Chicago, Illinois.

Intermission for Review of Exhibits

Diagnostic Clinic (Medical).

Dr. Henry S. Plummer, Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

BRAIN AND CENTRAL NERVOUS SYSTEM

Address: "The Differential Diagnosis of Intracranial Lesions."

Dr. Alfred W. Adson, Associate Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address: "Tic Doloureaux."

Dr. Walter E. Dandy, Associate Professor of Clinical Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Address: "The Importance of a Consideration of the Autonomic Nervous System in Medicine and Surgery."

Dr. William J. Mayo, Chief of Staff, Mayo Clinic, Rochester, Minnesota.

Noon Intermission

THE THYROID GLAND

Address: "Late Results of Thyroidectomy for Hyperthyroidism."

Dr. Charles A. Elliott, Professor of Medicine, Northwestern University Medical School, Chicago, Illinois.

Address: "Mortality Factors in Thyroid Disease."

Dr. Frank H. Lahey, Director, Lahey Clinic, Boston, Mass.

Address: "The Thyroid Heart."

Dr. Stewart R. Roberts, Professor of Clinical Medicine, Emory University School of Medicine, Atlanta, Ga.

Address: "Cause of the Specific Phenomena of Exophthalmic Goiter."

Dr. Henry S. Plummer, Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address: "Newer Methods for the Management of the Bad Risk Patient."

Dr. George W. Crile, Director, Cleveland Clinic Foundation; Professor Emeritus of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

Address: "Acute Abdominal Conditions."

Dr. Arthur Dean Bevan, Clinical Professor of Surgery and Head of Surgical Department, Rush Medical College of the University of Chicago, Chicago, Illinois.

LIVER AND GALL-BLADDER

Address: "The Significance of Jaundice."

Dr. David P. Barr, Professor of Medicine, Washington University School of Medicine, St. Louis, Mo.

Address: "The Value of Tests for Liver Function."

Dr. William J. Kerr, Professor of Medicine, University of California Medical School, San Francisco, California.

Address: "Cirrhosis of Liver."

Dr. Leonard G. Rowntree, Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address: "Surgical Lessons of the Bile Ducts."

Dr. E. Starr Judd, Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address: "Observations on the Etiology of Gall Stones."

Dr. Andrew C. Ivy, Professor of Physiology and Pharmacology, Northwestern University Medical School, Chicago, Illinois.

The acceptances of the following distinguished guests were received too late for them to be included in the above program. They will, however, take part in the program some time during the Assembly:

POSITIVE

Dr. Ferdinand Sauerbruch, Prof. of Surgery, Medical Department, University of Berlin, Berlin, Germany.

Address: "Operative Treatment of Cataract."

Dr. Emile de Grosz, Prof. of Ophthalmology, Medical Department, University of Budapest, Budapest, Hungary.

TENTATIVE

Dr. Ray Lyman Wilbur, Secretary of the Interior, U. S. A., Washington, D. C.

Dr. Paul Clairmont, Prof. of Surgery and Head of the Department of Surgery, Medical Department, University of Zurich, Switzerland.

Dr. Edmund Gros, American Hospital in Paris, Paris, France.

Detailed information relative to the meeting can be procured by writing Dr. Edwin Henes, Jr., executive secretary, 445 Milwaukee St., Milwaukee, Wis. See advertisement on page 2 this issue.

AN UP-TO-DATE SURVEY OF ACUTE ANTERIOR POLIOMYELITIS

Because of the large number of cases of infantile paralysis that is appearing over the country in the last few months we feel that it is highly proper to give the subject as much publicity of possible. The following article is an up-to-date survey of the subject written by George M. Stevens, M. D., epidemiologist of the Los Angeles Health Department, printed by George Parrish, M. D., Health Officer of Los Angeles, and reproduced in the August issue of *California & Western Medicine.*

INFANTILE PARALYSIS*

1. *What is "Polio"*?—Acute Anterior Poliomyelitis (Infantile Paralysis).

An acute systemic infectious disease which in a limited number of cases tends toward an involvement of the gray matter of the central nervous system, capable of causing widely disseminated lesions throughout the tissues of the brain and cord. The toxin produced in this disease has a special affinity for destroying the gray matter of motor tracts and seldom affects except indirectly the sensory tracts. The disease occurs spasmodically, but has strong epidemic propensities. It is of sudden onset and is a disease preëminently of childhood and young adults.

2. *What Do We Know About Its History*?—It is of comparative recent origin. First recognized for what it really was, an epidemic disease, by Michael Underwood in his "Diseases of Children," published in 1784. In 1884 an epidemic started in Stockholm, Sweden, and since that time has spread intermittently all over the world. Where it once attains a foothold there it remains, occurring spasmodically or rather mildly endemical, occasionally lighting up into epidemics, always leaving a train of death and three times as many more crippled children in its wake. The rattlesnake and deadly cobra give some warning and against them man has battled successfully; but this, a thing more deadly and unseen, remained for many years a dreaded mystery, seemingly unsolvable. Like measles and other infectious fevers, the first epidemics in a people new to its manifestations have been more virulent and deadly, with a larger number of people affected than in epidemics following. The first real epidemic came to Los Angeles in 1913, with 242 cases and 47 deaths. We had had a few cases now and then for a couple of years before. It has been with us ever since and has assumed epidemic proportions at times.

3. *Will This Be a "Polio" Year?*—"Polio" has generally manifested its epidemic propensities in the summer months. June is ordinarily considered the key month. If there is considerable of a rise in June we look for more in July, August, September and October. In the city of Los Angeles, with three cases in

March, seven in April, eight in May and over fifty in June, we can look forward to cases of infantile paralysis until the warm weather is over.

4. *What Is the Cause of "Polio"?*—It has been proved that a filterable virus carrying the infection is responsible (Flexner and Lewis in 1909) and this same year three different observers working independently succeeded in transmitting the disease from one monkey to another.

5. *What Has Been Learned by Research and Experimentation?*—The early investigations showed diplococci, streptococci or micrococci in the spinal fluid. These organisms are probably secondary invaders and some of them, grown under anaërobic conditions, assume the shape of the globoid bodies described by Flexner and Noguchi. All of these can be filtered out and the filtrated fluid will still produce the disease in monkeys. The usual laboratory animals, rabbits, guinea pigs, etc., are not suitable for experimentation; of all animals only monkeys are affected with the same systemic and cerebrospinal involvement as in man. It has been definitely established that the virus gains entrance into the blood, lymphatics and central nervous system by way of the nasopharynx; also that virus implanted in the nasopharynx does not invariably gain entrance into the central nervous system, and only in exceptional instances does this result. Only once in about two hundred times (according to Harold Amoss, of Johns Hopkins Medical School).

In other words, according to Amoss, two hundred people can be "Polio" carriers for every one that develops a paralysis. If this is true, a great natural resistance exists against poliomyelitis in most individuals.

Epidemiological studies of epidemics bear out the truth of this statement. While more than one case in a family does occur, it is the usual thing, occurring in not over five per cent of the cases. In fact it has often been called the one case in a family disease. The failure of the virus to infect is inexplainable. Experiments in the Rockefeller Institute have demonstrated the following facts. These facts are important; they pave the way to at least partial control of this disease. Get this:

Experiment No. 1. "Polio" virus from the nasal musoca or spinal canal of the one afflicted, injected into the spinal canal of the monkey, produces "Polio."

Experiment No. 2. "Polio" virus plus the normal secretion from a healthy nose, allowed to stand for a time, and then injected into the spinal canal of a monkey, does not produce the disease—virus neutralized.

Experiment No. 3. A pledget of cotton soaked with the virus placed well back in the nose of monkeys is removed after two hours; the animals usually remain well.

Experiment No. 4. Pledget of cotton soaked with "Polio" virus placed well back in the nose of monkeys, is allowed to remain twelve hours. Experimental poliomyelitis results, showing that the permeability of the mucosa is penetrated by the virus. Long continued contact has overcome the natural resistance.

Experiment No. 5. A healthy contact to a "Polio" case is selected. Virtus from a "Polio" case is mixed with his nasal secretions and allowed to stand. This is then injected into the spinal canal of a monkey. The monkey contracts the disease, demonstrating that nasal washings from carriers do not neutralize the virus.

Experiment No. 6. A healthy individual is selected who has never been in contact with the disease and whose nasal washings have been proved by Experiment No. 2, to neutralize the virus. His nasopharynx is treated with some one of the antiseptics, saline sol., argyrol or even plain water for a few times. After treatment his nasal washings are mixed with the virus and injected into the spinal canal of a monkey and his nasal washings have lost the power to effect a neutralization of the virus.

During the period of a common cold, the washings do not neutralize.

Virus has been detected in nasal washings six to nine days before the onset of the disease. (Harold Amoss, Johns Hopkins Medical School Bulletin of The New York Academy of Medicine. Vol. II, No. 9, Sept. 1926.)

6. *How Does It Spread?*—Mostly from contact with carriers who have not been ill with the disease and will not be. Sometimes, but infrequently from known frank cases. The virus is spread from nose to nose much as a common cold; indirectly at times through infected articles; insects and flies, and milk have at times been found indirectly to transport it; dust from the air is probably a common way. Almost never spreads in hospital wards, nor does it affect doctors and nurses as is the case with all other infectious fevers. Bowel discharges and articles soiled therewith from patients are infectious.

7. *Who Are the Victims?*—The victims are young children, adolescents and occasionally an adult. The most susceptible age is under five years, but strange to say these young children often combat the disease better than those older.

8. *What Is the Incubation Period?* From three to ten days commonly six days.

9. *What Are the Symptoms?*—Most of the cases have very slight general symptoms and frequently escape notice. In about five per cent of the cases paralysis strikes out of the blue; in the other 95 per cent fever always occurs and is the most constantly found symptom. It may be low or high, generally low. Headache is the next most common symptom and is found in practically all cases where patient is old enough to describe the sensation. Constipation is the rule, but diarrhoea has occurred in some epidemics. Pain, tenderness and muscle soreness are nearly always present. Stiff neck occurs in 40 per cent of the cases. In many instances the patient looks very much sicker than the temperature and pulse would indicate. Sweating is very common. A valuable sign is the fading of color in the eyes and ofttimes a glassy appearance. (Ask the mother about this.) Extreme irritability is common in some; stupor in others.

Tremors and twitching of the muscles somewhere is often observed. Convulsions occur in babies. Delirium occurs at times, but is generally of short duration. Reflexes are disturbed or absent when the poison reaches or has reached the central nervous system. If this has occurred, then disturbances of taste, speech, deglutition, breathing and all kinds of muscle paralysis may be observed according to what particular spot the gray matter in the cord or bulb becomes disorganized. Not all of these symptoms ennumerated appear in any one case. Diagnosis on the start is difficult.

10. *What Are the Different Types?*—Classified as to symptoms:

1. The abortive type.
2. The one-hump type.
3. The dromedary type.
4. The out-of-the-blue type.

The most useful classification for clinical use as met with in practice is as follows:

1. The spinal poliomyelitic form,
2. The meningitic,
3. The encephalitic.
4. The form resembling Landry's paralysis,
5. The abortive,
6. The bulbar or pontine form,
7. The ataxic,
8. The polyneuritic (resembling neuritis).

11. *How Is a Positive Diagnosis Made?*—This may be easy or difficult.

Easy, where motor paralysis is present and the history, symptoms and signs check up with the findings. Here the diagnosis is made too late to abort the disease.

Difficult and ofttimes impossible in the abortive and preparalytic state of the paralytic type unless blood and spinal fluid tests are made. If these tests are made by competent men they are reliable and run true. Every beginning "Polio" or case strongly suspected of being "Polio" should be a hospital case. Early diagnosis and early treatment with convalescent blood will save lives and prevent much crippling.

The leucocytes (white blood corpuscles) in blood are increased in the early stages. (Normal, 7,500; anything above that is leucocytosis.) This occurs also in other diseases but not with those easily confused with "Polio," and besides there is apt to be an increase in the proportional number of mononuclear cells.

If the toxin has reached the spinal fluid, the spinal fluid is clear under pressure and the cell count increased above the normal, generally with a preponderance of polymorphonuclear cells in the early days, later a preponderance of lymphocytes.

The colloidal benzoin test has been used in the General Hospital for several years and is extremely useful and correct in recognizing those doubtful cases of poliomyelitis with no paralysis and rather close to the normal cell count line. It is nearly 100 per cent positive in the first three weeks of "Polio,' in tubes 6, 7, 8, 9. It is also very useful in making a distinction between encephalitis and T. B. meningitis.

12. *Can a Preparalytic Diagnosis be Made?*—Yes. By the methods just enumerated and it is being more frequently done than formerly.

13. *What Are the Methods of Prevention?*

1. Recognition of the disease.
2. Isolation and quarantine of cases.
3. Beside concurrent disinfection with medical aseptic technic and exclusion of other members of family from sick room.
4. Education of physicians and the public as to the real facts, with daily information as to the number of cases, prophylactic methods, etc.
5. Prophylactic methods:
   (a) Keep away from sick people.
   (b) Avoid crowds. (This applies to grown-ups as well as children, as we may all become carriers.)
   (c) Protect yourselves as far as possible against colds. Do not get overheated. Do not get fatigued or chilled.
   (d) Get plenty of sleep—make the children take a nap.
   (e) Exercise in moderation.
   (f) Plenty of fresh air and sunshine in the house with screens.
   (g) Eat in moderation.
   (h) Do not worry.
   (i) As far as possible, avoid dust and dirt; keep down the dust about your house by the use of a hose.
   (j) Wash the hands before eating.
   (k) Keep the house clean.
   (l) Keep yourself clean and the children clean; do not let them wallow in the dirt.
   (m) Most people are better off at home than to try to run away from trouble.

ABOVE ALL:

   (n) Do not do anything that will neutralize the natural protection afforded by the normal mucus in your nose and throat. Do not use any antiseptic solutions in the nose or throat as a prophylactic. Even plain water is harmful.
   (o) Keep out of swimming pools. They are not harmful per se—water in the nose or throat by washing out the natural secretions neutralizes your protection. Diving is particularly harmful.

14. *Can We Forecast From Facts and Figures the Future of the Present Flare-up?*—We surely can to a certain extent.

The population of Los Angeles in 1912, when we had our most severe epidemic, was 430,000. At that time we had for the year, 242 cases and 47 deaths (approximately one case for every 1,776 people). The next most severe epidemic was for the year ending 1927, with 146 cases and 37 deaths (one case to every

6,438 people) and our population at this time was well up to 1,000,000.

With three times the population now that we had in 1912, we might expect if other conditions are the same to have three times as many cases for the year, or 726 cases, with 141 deaths. This amount hardly seems possible when we remember that the first real epidemic of "Polio" in any community is always the most virulent.

With 279,000 school children which we now have, add another 71,000 for good measure, to include the universities and other young adults, we have approximately 350,000 susceptibles; divide this by 200, the figures quoted by Harold Amoss as the susceptibility rate, and we get the figure 1,750, which is the worst that could happen to us without control by known preventive measures and if all the susceptibles came down with the disease.

15. *Does a Specific Form of Treatment Exist?*—Yes! The immune blood of a person who has recovered from the disease if given before paralysis sets in is specific. It also will produce a relative immunity lasting for six weeks or longer if given before the symptoms occur.

16. *What Is the Very Latest on Treatment?*—Cisternal puncture has to a certain extent supplanted lumbar puncture. Often both are used. It is better in that serum can be introduced where it will do the most good quickly and where gravity is brought to our assistance. It is just as safe.

17. *Is Quarantine Efficient?*—In the light of present knowledge we cannot believe otherwise, but the major problem is that of the healthy carrier.

18. *What Is the Nursing Technic?*—As far as prophylaxis goes, isolation from others in a well ventilated, screened room, concurrent bedside disinfection and medical aseptic technic.

19. *What Are the Lines of Defense?*—As enumerated in 13 on "Prevention, emphasis is again placed on the avoidance of contact with those ill with the disease and with carriers. As nearly anyone may be a carrier, this means to avoid carefully the lessening of local or body resistance.

20. *Will "Polio" Ever Be Conquered?*—A specific method similar to the Schick test will sooner or later be discovered; more than likely a method of immunization against the disease will follow. A remedy to augment or take the place of immune blood will be found.

21. *What Should the Householder Do When He Suspects a Case in His Family?*—Call a reliable doctor at once. If you have none or cannot afford one, call the Health Department.

After you get a doctor, do as he tells you.

Do not oppose sending the case to the hospital and do not oppose cisternal puncture with immune blood treatment.

Do not oppose quarantine. Protect others in your family at this time by isolating as far as possible the first sick one. Do not let a well child be in the same room or sleep in the same bed with the sick one and above all, act quick.

Correspondence

MORE ABOUT THE POOR

On page 3 of the July, 1930, issue of the ILLINOIS MEDICAL JOURNAL appears an editorial headed, "Our Philanthropy Was Really the Cause of Our Undoing. Who is Responsible for the Poor? Certainly Not the Doctors." It consisted, as stated in the first paragraph, of remarks of Dr. Harry M. Hall delivered at the annual conference of Secretaries and Editors held in Chicago, November, 1929, and published in the A. M. A. Bulletin. The first column was Dr. Hall's now well known remarks concerning his opinion of the irresponsibility of doctors for poverty and therefore, by implication, for the care of the poor when sick. The second column, beginning "The Industrialization of America," etc., which also was included in the quotation was not a part of Dr. Hall's remarks but was the essential part of an original editorial published in the July issue of the *St. Clair County Medical Society Bulletin.*

We hope that through these columns the mistake may be corrected as we feel that Dr. Hall may be embarrassed by our remarks, incorrectly attributed to him, which were meant actually to take issue with his implied attitude of irresponsibility for the poor when sick.

We maintain that since doctors have through all time assumed the responsibility for the care of all the sick, we must seriously and quietly attempt a solution of the increasing problem of sickness today without protest if we are not to invite more extensive encroachment by the state into the practice of medicine.

Any other attitude would seem to lower medical service to the status of a commodity. If "our philanthropy was really the cause of our undoing" and if all the people are to be adequately cared for, a goal for which we dare not fail to strive, then state medicine to serve the great masses is inevitable.

JAMES J. DONAHUE, M. D.,
Editor, St. Clair Co. Medical Bulletin.

BLOODLESS CHILDBIRTH

Eldorado, Ill., Aug. 6, 1930.

To the Editor: There has been quite a lot of discussion in regard to bloodless childbirths, and I wish to report that on July 30, 1930, I delivered a child for a multipara, it being her 6th child and there was not a drop of blood except from the cutting of the cord and there was not any blood at any time during the puerperium and the mother was up on the 5th day when I was back to see her and has had no untoward symptoms of any kind. I can furnish sworn evidence of this fact by two witnesess.

A. H. Beltz, M. D.

YE PEDIATRICIANS, ATTENTION!

The Modern Baby

"The hand that rocks the cradle"—but there is no such hand.
It is bad to rock the baby, they would have us understand;
So the cradle's but a relic of the former foolish days,
When mothers reared their children in unscientific ways.
When they jounced them and they bounced them, these poor dwarfs of long ago—
The Washingtons and Jeffersons and Adamses, you know.

They warn us that the baby will possess a muddled brain
If we dandle him or rock him—we must carefully refrain;
He must lie in one position, never swayed and never swung,
Or his chance to grow to greatness will be blasted while he's young.
Ah! to think how they were ruined by their mothers long ago—
The Franklins and the Putnams and the Hamiltons, you know.

Then we must feed the baby by the schedule that is made,
And the food that he is given must be measured out or weighed.
He may bellow to inform us that he isn't satisfied,
But he couldn't grow to greatness if his wants were all supplied.
Think how foolish nursing stunted those poor weaklings, long ago—
The Shakespeares and the Luthers and the Bonapartes, you know.

We are given a great mission, we are here today, on earth
To bring forth a race of giants, and to guard them from their birth.
To insist upon their freedom from the rocking that was bad
For our parents and their parents, scrambling all the brains they had.
Ah! If they'd been fed by schedule would have they been stunted so?
The Websters and the Lincolns and the Roosevelts, you know.

—*Bishop Doane.*

WHAT THE GREAT DOCTOR MUST KNOW

The great doctor must know almost as much about the social order as the sociologist. This is necessary because the varied forces—political, social, economic, industrial, educational, religious—that march across a nation, making its mind or marring its spirit—register their effects in the lives of the doctor's patients. The more the doctor knows about these forces that make the atmosphere in which men's minds and bodies live, the more intelligently can he trace effects to their causes, and the more wisely can he counsel his patients.

The great doctor must know almost as much about the mind as the psychologist. This is necessary because even the most materialistic scientist admits that there is a subtle relationship between mind and body that the doctor of the body dare not overlook, for when he does overlook this relationship a thousand quacks rush in to capitalize his oversight.

The great doctor must know as much about the subtle art of counselling as the priest.

The great doctor must refuse to be party to the ironic paradox of commercializing a profession just when the professionalization of commerce begins to dawn.

The great doctor must decline to tear his specialism out of the living texture of the whole medical fabric. He will not allow the noble science of surgery, for instance, to degenerate into a merely higher carpentry.

And, finally, the great doctor must be able to distinguish between Hippocratic ethics and hypocritic etiquette in matters professional.—Glenn Frank, President, The University of Wisconsin, in Surgery Gynecology and Obstetrics.

A SPINE SONG

(To be sung to the Good Old Pre-War Tune)

Call a doctor in the night time
If your pulse is acting queer,
For with him it's just the right time
To remove your leg or ear.

(Chorus)

For it's always fair weather
When Specialists get together,
With your lungs full of ether
And your fam'ly full of fear.
Oh, it's always fair weather
When Specialists get together,
With a spine on the table
And a good saw ringing clear.

J. S. in *Life.*

Original Articles

THE HEALTH DEPARTMENT AND THE PRACTICING PHYSICIAN*

HAROLD M. CAMP, M. D.,
MONMOUTH, ILL.

There is probably no subject in Medicine which has been presented more frequently before the public health groups or which has been discussed more throughly than the relationship which should exist between the practicing physician and his health department. We could say that the proper relationship should be a thorough co-operation between these agencies, for each is dependent on the other for their proper function and close the discussion, but perhaps it might be well at this time to briefly discuss some of the economic phases of this relationship. We are all agreed that the closest type of cooperation should exist, but there is occasionally a question as to whether or not we actually practice this tenet as thoroughly as we talk it. The very fact that a discussion can be raised on the subject of the relationship between the health officer and practicing physicians suggests that this relation stands upon different ground than that of doctor to doctor. A well defined code of ethics describes the proper and honorable attitude that one physician may adopt toward another, but the health officer appeared on the scene long after the code of ethics had become a traditional heritage. The adaptation of physicians to this newer phase of health work has naturally varied in different communities, from friction in some to the most complete harmony in others.

This fact naturally suggests that some misunderstandings have arisen and that perhaps neither side in the controversy has taken the proper steps to iron them out satisfactorily. That there should be universal harmony between these important health agencies, no one can deny.

It is the function of both the health officer and the health worker to make people dissatisfied with prevailing health conditions and instil in them an active desire to improve these conditions.

The medical profession and all allied professions must do the necessary medical work which will bring about improvements in individual and public health. These improvements, if made, demand a united effort on the part of both the public health officials and the medical profession at large. In order that we may show the citizens that they should no longer be satisfied with prevailing health conditions we should have definite and concrete evidence that our economic losses are greater than they should be and we should convince them that we have available a program which will significantly reduce the losses and increase the economic well being of the community. In order that the medical profession may be properly stimulated to do their part in this program, the program itself must not encroach upon the legitimate practice of medicine.

It is necessary that exact information relative to the prevalence of contagious or notifiable disease be at hand, to carry out the necessary educational work to improve health conditions. The health officials must depend on the medical profession for this information in the way of promptly reporting all such cases as early as the exact diagnosis is made. Recent surveys show that in certain counties in Illinois there is a distinct shortcoming on the part of physicians in the furnishing of this information, which naturally reflects no credit on the profession. If the health officer has complete and accurate records, he will be in a position to suggest a program for improvement and demonstrate its actual value to our citizens. Unfortunately there is not a uniform type of health department in our various communities.

When we think of health departments, we think in terms of the Federal Government, the State and the municipality. In our own State, although we have some 2,300 health officers, only a few are actually graduates in medicine and capable of caring for public health problems.

According to the Surgeon General of the United States Public Health Service, the Federal Department is interested chiefly in the care of seamen in its services, those of its personnel injured or ill in the line of duty, with such functions as quarantine, immigration and services rendered to States requesting it and the control of biologic products.

The State Department of Health in its activities varies in different States. In Illinois, according to the director of the Department of

*Read before the Section on Public Health & Hygiene, Illinois State Medical meeting, May 21, 1930.

Public Health, the principal aims of the Department are:

1. To study the diseases from which people are suffering and the cause from which they are dying.

2. To keep abreast of Medical Science concerning the best methods of conservation of health and lives.

3. To acquaint the medical profession of the important health problems of their various communities and suggest what in their opinion is the best method of solving them and render to the medical profession all possible assistance with the aid of the State laboratory and the personnel of the department.

4. To carry on an educational campaign in all lines of preventive medicine, this information to be disseminated by means of the public press, periodicals, circulars and by public addresses to lay groups where such information can do the most good.

5. To try to co-ordinate the activities of the Department of Health, the medical profession, the dental profession and other professional and lay groups so that the most good can be accomplished toward the conservation of health and life.

The city health departments vary from highly organized departments endeavoring to care for the various phases of preventive medicine to those merely attempting to control communicable diseases, water and food supplies and improve sanitary conditions in their respective communities.

Unfortunately the rural health service consists principally in tacking up quarantine cards when a physician reports the presence of the disease to the township supervisor.

The success of programs undertaken by health departments depends largely on the type of executive officer at the head of the department and on the type of cooperation which is given by the medical profession. There seems to be no question today, that the one responsible for the successful operation of a well organized health department should be a graduate in medicine and preferably he should have had several years' experience in practice before assuming the role of health officer to better enable him to increase the efficiency of the department and to get a greater cooperation from the medical profession.

Public health work is not a separate profession, as many still believe it to be, but is a specialty in medicine and should be considered along with the other specialties. This fact is well recognized by our medical societies, in having a special section for public health and hygiene discussions. It is decidedly important and necessary that the public continue and even increase its interest in health problems for this consideration on the part of the public makes the work easier and more efficient and increases the cooperative spirit. The health department and the medical profession are equally responsible for a continuation of this educational work, which can not do other than bear fruit in the way of minimizing disease. The physician should always be an educator and consider his type of education equally important with all other forms of education.

The work of the Educational Committee of the Illinois State Medical Society has increased each year and shows the readiness of people today for this type of service.

The medical profession has been accused of thinking only in terms of therapeutics rather than in disease prevention and today it is well known that one is as important as the other.

There should be no material difference between the educational work done by the health department and that done by the physician and the most efficient work can be done when both work together, this, too, diminishing any overlapping of service.

When the health department officials and the profession at large get together on important programs, there is no reason why there should be any animosities on either side and so long as we have cooperative physicians managing the activities of our health departments and our physicians are willing to do their part, there should be no dissension whatever. Our people today want better health for themselves and their families and they naturally look to professionally trained men and women for their guidance. All physicians by virtue of their training and practice should be interested in all phases of public health work, although it is probably a fact, that of all scientific articles published in our medical journals, the average physician will pass up more articles on this subject than any other. This should not be the case and in this age when we are considering medical economics as never

before, we should be thoroughly interested in all work pertaining to an improvement in our public health.

The principles of public health should be taught more thoroughly in our medical schools and then practiced in every day life by our graduates. The old distinction frequently made that physicians are to cure disease, while public health workers should prevent disease, should no longer stand, for there is no doubt that preventive medicine is as important to the practitioner of medicine as curative medicine.

The great reduction in disease mortality has been largely in those diseases against which we have definite measures of control or prevention and a much greater reduction can be made in the mortality statistics of such diseases as diphtheria and typhoid fever, when we have a more concerted effort on the part of health departments and medical men in general to educate the laity as to the positive means of eradicating these diseases through a general use of toxin-antitoxin on the one hand and typhoid vaccine on the other. The disgraceful picture of smallpox in Illinois, due to a general laxity in being vaccinated, is to be deplored.

This in part, no doubt, is due to the propaganda emanating from the anti-vaccinationists with their false claims as to the ill effects of vaccination and it is a subject which every health department and every physician should be interested in.

The propagandists tell people that their constitutional rights should not be hampered, which no one doubts, but smallpox is a disease which can be had or can be avoided according to the wishes of each individual. It is a man's right to be sick, if he so desires, provided he does not interfere with the health and rights of others, who may not believe as he does. No man has the right to cause the development of a preventable disease in others, because he does not believe in its prevention.

It is quite probable that if the word compulsory was left out of our discussions on the smallpox situation, especially in connection with vaccination, much of the prejudice now prevailing against it would be eliminated.

This is work which both the health department and the physician in practice can do jointly.

The health department should urge people to have periodic health examinations, or examinations of the apparently well, while the physician should not only favor and do the actual work, but he should have his own periodic examinations, for statistics show that the mortality rate among physicians is actually higher than that among many other professions, cardiac and vascular diseases leading the list of causes of death.

In our consideration of this highly important subject, we should not overlook the valuable assistance that can be obtained through many of the lay organizations interested in some phases of health work, in a cooperative way, such as the Parent Teachers Association, Women's Clubs and others. They can do much in an educational way and they are, in many instances, anxious to help.

We should not limit this important preventive medicine service to the mere routine work, telling the one examined that he is in perfect health, or that he has certain impairments, but we should tell him what he should do to continue enjoying good health and when impairments are found, we should give all possible advice and assistance so that he may in spite of his handicaps increase his span of life as much as possible.

One function of our health department is the collection and filing of death certificates. There seems to be no doubt that the opinion that the maternal death rate incident to childbirth is higher in this country than in most civilized countries is still prevalent. This may be due, in part, to the fact that our methods of signing death certificates in those cases where pregnancy is merely coincidental, are different from those reported in other countries. On the other hand, there may be a considerable laxity on the part of many physicians in signing death certificates in naming childbirth as the actual cause of death, instead of it merely being a contributing or coincidental factor. It is quite important that we give this matter a more serious consideration and the health department can aid the physician materially in this regard by giving more definite rules for the physicians' guidance.

Formerly medical society meetings were principally a gathering together of medical men to hear and discuss papers on medical subjects and to enjoy the fellowship that such meetings afford, but today we have many economic and civic functions to perform and the medical societies

should be acutely interested in all problems confronting other citizens. Public health, although primarily a public problem, must be worked out by those educated to consider health problems and they should always be worked out under professional guidance. Every organized health agency should be dominated in program and in administration by medically trained people. In our smaller communities without adequate departmental service, or guidance, they should be under the guidance of county medical societies, in order that most may be accomplished. Our county medical societies in arranging their programs should remember the various phases of public health work and have speakers from time to time capable of best presenting these subjects before the societies. Our Educational Committee has received a considerable number of calls the past few years, for speakers on these subjects and the meetings so arranged have been highly interesting and have had a tendency to increase the friendly relationship between societies and the health workers.

The Illinois State Medical Society was largely responsible for the establishment of a State Health Department some fifty-three years ago and there is no reason why all medical men should not be interested in all of the Department's activities today.

Education, from the physicians as individuals, as medical societies and as health officials is the keynote of the situation, when it comes to a further reduction or entire elimination of many infectious and contagious diseases.

The interests of the medical profession, the health departments and the public are largely the same. In his proper place, the health officer, by the information given to the public, makes the individuals and the communities discontent with present health conditions. The medical profession supplies the machinery for improving the conditions which creates the dissatisfaction. With these principles in mind, there should be no difficulty in working out programs which could be presented to the public with the united support of both the medical profession and the health officials. These two agencies working solidly together can give to Illinois and each of its counties a health and medical service which will curtail quackery and exploitation to a maximum degree and which will bring to the public the greatest degree of physical and economic well being.

DISCUSSION

Dr. A. A. Crooks, Peoria: I don't know whenever before it has been the good fortune of this Section to have heard an expose of this subject presented quite so well as Dr. Camp has done this. I believe it can only come from the rare and rich experience of Dr. Camp. There should be no friction, there should never have been any friction, should never have been any distinction existing between the medical health officer and the practicing physician.

One important thing, I think, Dr. Camp has brought out in view of our present situation in Illinois is the matter of one word—compulsory. Its elimination, as suggested by Dr. Camp, I believe, spells the difference between success and failure in our proposed legislation before the coming legislature. Each and every one of us present, I am sure, are apprised of the fact that our present Commissioner of Health, Dr. Andy Hall, will strive to put through a bill making the matter of vaccination a compulsory proposition. But I don't like the word and I think that the average American dislikes the word "compulsory." If we could circumvent that by some more adroit phraseology, I believe the time is here, in view our past three years' experience in the State of Illinois to achieve such legislation. Of course, none of us are proud of our shameful smallpox record and the time has arrived when we possibly have the best chance of putting over this type of legislation that we have ever had.

Dr. Charles H. Miller, Chicago: It may be of interest to you members of this Section if I would recount how nicely the profession of Chicago is cooperating not only with the health department but also with other civic bodies, a large proportion of whose activities relate to public health. Cook county is divided geographically into fifteen branches each with its officiary and have elected a member from among themselves to what is called the advisory committee to the health commissioner. This commissioner with this advisory committee meets regularly at least once a month; recently about every two weeks, and sometimes as often as once a week. We have been putting on a campaign up there to immunize our children against diphtheria, holding out as a goal to be reached the experience of Grand Rapids and Tacoma, which cities had been accustomed to a death rate of about eighteen per thousand from diphtheria and abolished it in 1928. The methods adopted were thought out in the health commissioner's office with this advisory committee. We canvassed the papers of Chicago and tried to get them to help us. One gave us four full-page advertisements and provided us with 600,000 copies of this advertisement, which was published to instruct the people of Chicago and one of these was given to every school child in the city. In the round-up for pre-school children entering school next Fall, the health commissioner with a number of these men from the medical profession upon invitation went to the Women's City Club,

which is considering this problem, and we had a most satisfactory interview with them, guiding them in a way that would prevent friction between their efforts and the medical profession of Chicago. This is the first time in my experience now extending back over thirty years when we had the same excellent fraternal feeling between the medical profession and the health department because of the very fraternal spirit which is exhibited by the present health commissioner. He is just the man that we think we would like There is no end of opportunity for collaboration among all these various civic bodies, and we are now holding in Chicago a Health and Educational Exposition, the broadest in its scope and to me the most successful from the point of results of any we have ever had. It is the result of coördinated activity between the Chicago Department of Health, the Chicago Medical Society and every civic organization in the city, the Association of Commerce, Board of Education and what not. There are no exceptions. Such results as may be expected from such coördination of effort will be to reduce our morbidity and our mortality.

Dr. Harold M. Camp (closing the discussion): I haven't anything to add.

UROSELECTAN IN INTRAVENOUS UROGRAPHY

JOSEPH WELFELD, M. D., and
DAVIS H. PARDOLL, M. D.

CHICAGO.

After several attempts, both in Europe and this country, to discover a suitable urographic medium for intravenous injection, in November, 1929, uroselectan was first evolved. This preparation was a modification of Selectan-neutral introduced by Professor Binz and Dr. Räth, who were advocating the use of the latter as a medicament in cholecystitis and cholangeitis, and which was indirectly discovered to be demonstrable, upon roentgen examination, being excreted by the urinary tract. Selectan-neutral, given intravenously, produced excellent urograms, but the by-effects of headache, malaise, nausea, and vomiting inhibited its use and made it desirable to modify the preparation. Better tolerance and increased solubility were sought in order to obtain both a better concentration in the urine and a lesser degree of toxicity.

Dr. Swick, working at Professor Lichtwitz's clinic, with the assistance of Professor Binz and Dr. Räth finally succeeded in modifying its molecular structure by displacing a methyl group with sodium glycin, and found both of the requirements satisfactory, namely, decreased toxicity and increased solubility. This substance was given the name uroselectan, apparently because of its selective affinity for the urinary tract. Its practicability was next ascertained at von Lichtenberg's clinic in Berlin, and offered to the medical world.

Uroselectan contains 42 per cent. of iodine, is neutral in reaction, and is soluble in water up to and above 50 per cent. The iodine content is in an organically bound, stable form, and is kept in solution. The substance is excreted through the renal parenchyma, and, in normally functioning kidneys with no obstruction, close to 100 per cent. is recovered in the urine at the end of 8 hours in its unaltered state, the maximum concentration usually occurring 30 minutes after the injection and the greatest excretion taking place within the first 2 hours. Its administration is very well tolerated and apparently entails no after-effects, other than those recorded at the time of injection. Examination of the blood 15 minutes after injection fails to reveal its presence in the circulatory system.

With its advent, urology has marked another epoch-making advance in the field of medicine. By its further clinical application and study there remains no doubt of its vast importance, particularly in cases in which cystoscopy and ureteral catheterization are either contra-indicated because of the risk involved, or altogether impossible.

One does not easily forget the cases in which cystoscopy and ureteral catheterization were found to be unsatisfactory, most difficult, or accompanied by considerable risk, no matter to what degree of perfection the urologist laid claim. Particularly in bladders distorted by disease, where the ureteric orifices persist in their peculiar way of remaining invisible, even with the employment of a dye, or where the catheter refuses to advance within the orifice, regardless of the amount of manipulation by the operator, not to mention the minor annoyances of small meatus, urethral stricture, prostatic obstruction, hypersensitive patient, and numerous other causes, is the intravenous method of distinct advantage.

Hitherto, when these objections were encountered, urography was practically impossible, but with intravenous pyelo-ureterography these obstacles no longer inhibit satisfactory visual-

ization of the urinary tract. Is this then, alone, not sufficient to proclaim its importance! And yet, its possibilities have by no means been exhausted, especially with further improvement in interpretation and perfection in administration.

The recommended dosage is as tabulated below:

Infants and young children.....	20 c.c. of a 40 per cent. solution
Children up to 6 years.....	40 c.c. of a 40 per cent. solution
Children up to 12 years.....	60 c.c. of a 40 per cent. solution
Adults	100 c.c. of a 40 per cent. solution

Successful urography with uroselectan depends upon the selective affinity of the renal parenchyma for the substance and its ability to excrete it. Where the concentration is satisfactory, visualization of the kidneys, ureters, and bladder occurs, while in cases in which there is impaired function or retarded excretion with poor concentration, its advantageous use as a photographic medium is diminished. Function may be normal and yet excretion delayed due to mechanical obstruction. This condition may be either permanent as in prostatic hypertrophy without infection, or transitory, due to edema caused by an acute infection, which later subsides. Concentration may or may not be sufficient to permit satisfactory roentgenograms. In some cases excretion may be prolonged over a period of hours or even weeks, and concentration never great enough to render a satisfactory urogram.

Fig. 1

Fig. 1. Case 1, E. R., female, aged 27. Chief complaint: Marked tenderness and pain over right lumbar region; six months' duration. Cystoscopic findings were negative; catheters passed up into both pelves without any difficulty.

Pyeloscopy: Both kidneys functioning normally.

Urogram: RIGHT SIDE: Kidney visibility fair; the outline indicates a normal size, shape, and position. Opaque filling; visibility fair. Completeness of filling: Buds visible, slightly rounded. Urinary passages regular, pelvis medium size, satisfactory shape. Continuous with ureter tapering, ureter not well filled in middle portion.

LEFT SIDE: Kidney visibility, fair; lower pole lateral margin. Normal size, shape and position. Urinary passages well filled including buds, tend toward spike outline. Square pelvis, seems somewhat distended, abrupt junction with ureter, latter normal diameters. Middle section of ureter not visible. Bladder partly filled.

RESUME: Roentgenologically within the normal, a slight left hydronephrosis is suggested.

Fig. 2

Fig. 2. Case 2., S. L., female, aged 26. Chief complaint: urinary frequency; four months 'duration. Cystoscopic findings were negative; catheters passed up into both pelves without any difficulty.

Pyeloscopy: Both kidneys functioning normally.

Urogram: RIGHT SIDE: Kidney visibility, almost complete circumference seen, transverse diameter a little in excess compared to longitudinal diameter; location; lower pole almost reaches crest of ilium. Opaque filling: visibility fair; a typical filling of renal passages; calyces distorted, seemingly crowded together, termini not well seen. Apparently lower main calyx not filled. Pelvic area: small, rather abrupt renal ureteral junction. Ureter well visible to pelvic portion. Normal diameters.

LEFT SIDE: Complete circumference visible, normal size, shape and position. Opaque filling: Apparently incomplete. Small pelvis, termini difficult to be seen, and pelvis small, tapering, continuous with ureter of normal diameters, seen to middle third.

RESUME: Atypical pelves, strongly suggest pathology on right, indeterminate on left. Moderate degree of ptosis on right.

Where the use of uroselectan is feasible, anatomical configuration, as well as function may be demonstrated. It is valuable in studying the dynamics of the urinary passages, the observation being carried on through the fluoroscope. This method has been particularly well developed at Professor Legueu's clinic in Paris, where pyeloscopy is the usual procedure, and graphic representation is executed by drawings. Only occasionally is a roentgenogram taken. It is an ideal method for studying the differences in emptying time of the renal pelves and ureters, and, is especially adaptable in the diagnosis of ureteral spasms, strictures, and kinks, as actual visualization of function is performed.

Under the indications for intravenous urography all cases would be classified in which cystoscopy, ureteral catheterization and direct urography are impossible or contra-indicated on account of the general condition of the patient, or because of anatomical or pathological reasons. These might be listed as follows:

1. Urethral
   - (a) Small meatus
   - (b) Small urethra
   - (c) Acute infection
   - (d) Stricture
   - (e) Tumor
   - (f) Prostatic obstruction
   - (g) Severe hemorrhage
   - (h) Urosepsis
2. Bladder
   - (a) Severe hemorrhage
   - (b) Extravesicle pathology, distorting anatomy
   - (c) Invisible ureteric orifices on account of,
     - (1) Infection
     - (2) Tumor

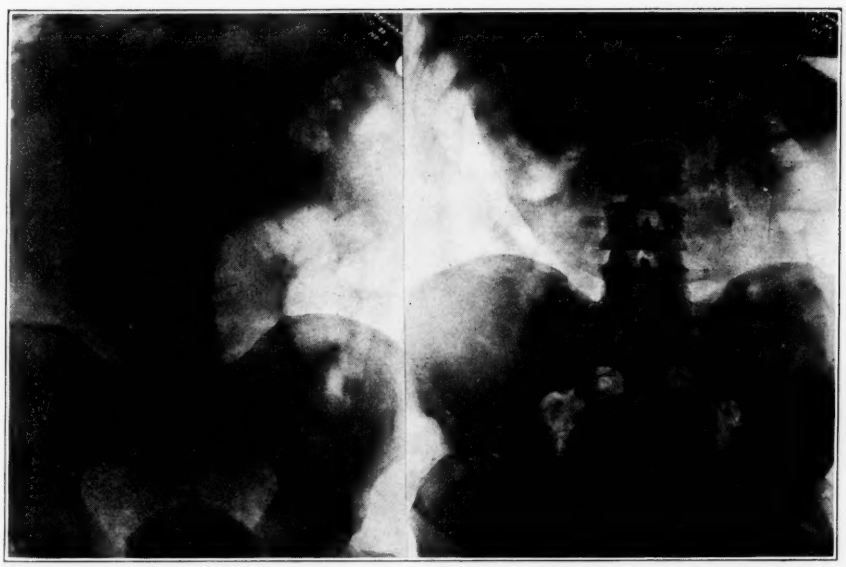

Fig. 3

Fig. 3. Case 3, H. B., male, aged 53. Chief complaint: Dysuria and frequency of six months' duration.
Pyeloscopy: Function of both kidneys somewhat retarded.
Urogram. RIGHT SIDE: Kidney outline: periphery seen, lower pole sweeping toward median line. Kidney area seems enlarged. Normal position. Opaque filling: abnormal. Major and minor calyces not recognizable as such. Renal pelvis not seen. One film of series shows lead-off to ureter on lateral side, apparently vagrant ureter recognized as far as crest of ilium. Normal diameters.
LEFT SIDE: Kidney outline difficult to visualize, faintly seen, much smaller than right. Upper pole plainly visible. Opaque filling very poor and decidedly abnormal. Usual outlines not recognizable. Ureter not seen.
RESUME: Pathological kidneys, possibly congenital, fused, or horseshoe kidneys.

Fig. 4

Fig. 4. Case 4, E. W., male, aged 62. Chief complaint: Frequency and nocturia, two years' duration.
Pyeloscopy: Both kidneys functioning normally.
Urogram: RIGHT SIDE: Somewhat irregular outline, periphery and lower pole. Opaque filling shows elongated, narrow pelvis and major calyces; termini fairly good, showing spikes or thorns. Slender, tapering pelvis continuing with ureter but latter shows lack of straight course to bladder.
LEFT SIDE: Kidney outline, lower half showing satisfactory but small outline. Opaque filling good in upper portion, blunt in middle portion, no lower portion. Renal pelvis, normal shape, tapering continuous with ureter, seen as far as middle third.
RESUME: Narrowed urinary passages on right suggest inflammatory process encroaching upon same. Could be congenital variation. Left kidney probably normal.

(d) Malformation
3. Ureter
(a) Absence
(b) Malformation
(c) Malposition
(d) Implantation into bowel
(e) Impaction of calculus
(f) Severe bilateral infection
(g) Tumor
(h) Stricture, impassable
(i) Kink
4. Kidney
(a) Solitary
(b) Polycystic
5. General
(a) Inflammatory condition of adnexa
(b) Manipulation followed by severe reaction
(c) Hypersensitive patient
(d) Very young children and infants
(e) Patient who will not co-operate

Contra-indications to intravenous urography would be all cases in which renal function is impaired to such a degree that excretion is seriously retarded or concentration hindered.

1. Hyoplasia
2. Advanced renal tumor
3. Pyonephrosis
4. Nephritis and severe nephrosis
5. Severely infected occluded kidney
6. Complete retention of urine either due to
(a) Impacted calculus
(b) Tumor
(c) Foreign body, blood clot, or tumor tissue

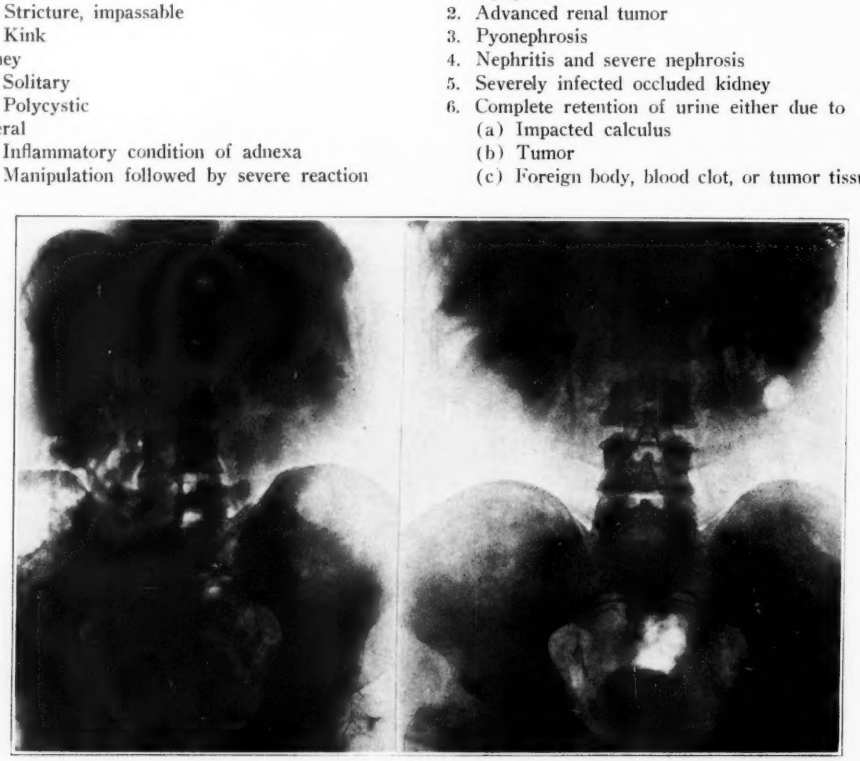

Fig. 5

Fig. 6

Fig. 5. Case 5, G. F., male, aged 52. Chief complaint: Frequency and nocturia; seven months' duration. Urethral stricture operated upon 30 years ago.

Pyeloscopy: Both kidneys functioning normally.

Urogram: RIGHT SIDE: The kidney outline plainly visible in entire circumference. Kidney slightly smaller than normal. Normal position. Opaque filling, unusual. Major calyces probably pointing forward and backward. Give no lateral outlines. No renal pelvis but direct narrow diameters from middle of renal filling through, passing around in a curve toward median line, then is lost.

LEFT SIDE: Kidney outline seen in lower half, indicates considerable enlargement and marked increased roundness, usual position. Renal filling scattered, does not seem to be connected directly or continuously with upper part of ureter. Renal pelvis not recognized. Opaque material in termini which seems dilated or distorted. Upper portion of ureter of satisfactory diameters to bladder.

RESUME: Evidence of bilateral pathology. Right kidney probably turned, upper ureter seems displaced by a tumor mass or cyst. Latter may be a part of lower half of kidney. Left side, intrinsic renal pathology such as polycystic kidney, etc.

Fig. 6. Case 6, G. S., male, aged 53. Chief complaint: Hematuria, and pain on urination, three years' duration. Anuria relieved by hot packs. Calculus removed from bladder 30 years ago.

Pyeloscopy: Function on both sides slightly retarded.

Urogram: RIGHT SIDE: Kidney outline seen only in part, indicating kidney of small size. Normal position. Opaque filling shows satisfactory renal pelvis, major and minor calyces not well filled. Latter seem irregular. Pelvis tapers into ureter, seen to third lumbar. High grade arterio-sclerosis of pelvis vessels noted.

LEFT SIDE: Renal outline plainly visible, lower two-thirds. Fairly regular, of satisfactory size and position. Opaque filling outlines urinary passages much too small, for size of kidney. Termini not well filled. Hardly discernible. Small pelvis, tapering continuous with ureter as far as fourth lumbar.

RESUME: Disproportion of cortex of left kidney to urinary passages suggestive of change but may be congenital variation. Right kidney probably normal, but tuberculosis to be considered.

7. Severe cardiac insufficiency
8. Prostatic hypertrophy, with severe degree of infection and retention
9. Where instrumentation or medication are desirable, as well as interpretation of function and pyelography

The Technic of Intravenous Pyelography with Uroselectan

The simplicity of preparation and administration recommends the employment of uroselectan as a medium for urologic roentgenography.

Its preparation is accomplished by dissolving the contents of a package (40 grams) in 110 c.c. of doubly distilled water, the constant stirring of the solution greatly facilitating its solubility. The solution, which assumes a yellowish tinge, is next filtered and heated to boiling and kept at this point for 20 minutes. After this the preparation is cooled to body temperature, the volume having been reduced to 100 c.c. of a 40 per cent. solution, when it is ready for injection.

Injection of the solution into the cubital vein may be made by either the gravity method or by the syringe. Some prefer to divide the dosage into two parts, injecting 50 c.c. into one arm, waiting from 3 to 5 minutes, and then administering the remaining 50 c.c. into the other arm. This, however, we have found unnecessary if the solution is injected slowly (15 to 30 minutes).

Oral administration has been attempted but discarded because of the frequent occurrence of

Fig. 7

Fig. 8

Fig. 7. Case 7, J. S., male, aged 50. Chief complaint: Frequency and burning on urination; occasional hematuria; six months' duration.

Pyeloscopy: Both kidneys functioning normally.

Urogram: RIGHT SIDE: Lower two-thirds of kidney plainly visible. Upper pole not on the film. Opaque filling dimly seen, narrowed passages, including pelvis which is very small. Ureter tapers, continuous with rather large but uniform diameters of upper third. Increases in diameter in middle third.

LEFT SIDE: Kidney outline difficult to see, not definitely visible. Apparently somewhat enlarged. Opaque filling rather dim but shows regular proportions of renal passages and termini. Somewhat angulated pyelo-ureteral junction. Ureteral shadow fades out at third lumbar but becomes visible below sacroiliac arch to bladder.

RESUME: No definite pathology indicated.

Fig. 8. Case 8, M. B., male, aged 30. Chief complaint: Incontinence. (Neurological diagnosis multiple sclerosis.)

Pyeloscopy: Both kidneys functioning normally.

Urogram: RIGHT SIDE: Elongated kidney seen in entire circumference. Overlying gas in distended colon and gastric ventricle interferes somewhat. Position of kidney a little lower than normal. Opaque filling shows satisfactory pelvis, major, minor calyces and termini, exception upper pole, possibly supplementary calyces. Kink in ureter in upper third, sharply flexed upwards and inwards and again showing sharp change in direction downward in course of normal ureter. Diameters fairly regular but show certain variations.

LEFT SIDE: Entire circumference seen outlining elongated kidney in normal position. Opaque filling substantially same character as opposite side. Change in direction of course of upper ureter below which becomes normal and shows variations in diameters in lower portion.

RESUME: No renal pathology, ureteral kinks (?), inflammatory changes in ureters, lower portions (?). Right kidney shows low grade hydronephrosis.

headache, malaise, nausea and vomiting in patients with renal disease. The rectal route may be employed, but is not as satisfactory as the intravenous method, according to Swick.

The preparation of the patient for the urogram is performed in the usual manner. The bladder is emptied prior to injection, a preliminary x-ray film being taken at this time, if so desired. The injection is now begun, at the end of which the patient is placed under the fluoroscope. Here the function as well as the configuration of the kidney pelvis and ureters, and the time of the appearance of the drug and its best concentration are observed after which a roentgenogram is taken. In some cases the substance is visualized within 5 minutes after the injection has been given. In Legueu's clinic in Paris they have a special x-ray apparatus constructed so that while pyeloscopy is being done a urogram may be taken on the same table, at any second one wishes to record the action of the urologic tract graphically. In most cases an interval of 20 minutes is sufficient time for the first exposure, which is followed by a second film 20 minutes later, and still another at the end of one hour after the injection has been completed. The patient is permitted to void at the end of the second exposure in order to better visualize the lower end of the ureters and bladder.

If the visualization is complete after the first three exposures no further x-rays are necessary.

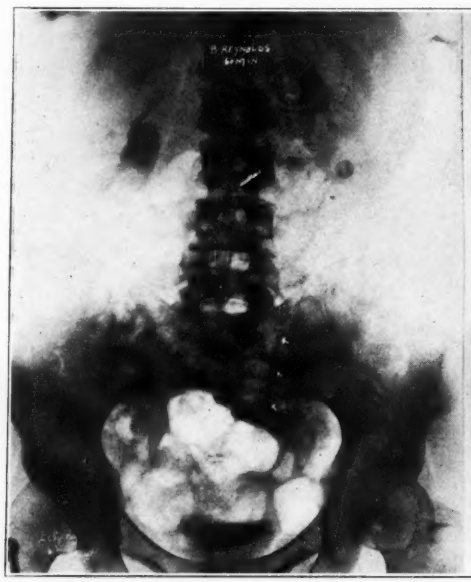

Fig. 9

Fig. 10

Fig. 9. Case 9, B. R., female, aged 35. Chief complaint: Recurrent attacks of renal colic, frequency and nocturia; four years' duration.

Pyeloscopy: Both kidneys functioning normally.

Urogram: RIGHT SIDE: Renal outline plainly visible in entire circumference. Upper lateral surface seemingly flattened by lower margin of liver. Normal size, slightly lowered position. Renal filling suggests dilated pelvis but kidney lies at a turned angle. Lower main calyx shows larger diameter than middle and upper. Renal termini normal. Renal pelvis unusual because of angle of kidney. Apparently normal ureter.

LEFT SIDE: Only upper pole of kidney recognized. Normal position. Opaque filling satisfactory. Major and minor calyces and termini not unusual except middle one which is blunt. Ureter seen to fourth lumbar. Normal diameters.

RESUME: No pathology suggested.

Fig. 10. Case 10, E. G., male, aged 62. Chief complaint: Recurrent attacks of ureteral colic on left side; passed gravel three months ago. Colic unrelieved by morphin sulphate gr. ¼, but disappeared on injection of uroselectan.

Pyeloscopy: Function somewhat retarded on left side.

Urogram: RIGHT SIDE: Kidney outline easily recognizable showing stubby type with irregular shallow scallops. Position good. Opaque filling fairly dense. Shows normal termini and urinary passages, medium size to pelvis, tapering continuous with apparently normal ureter.

LEFT SIDE: Kidney outline not recognized. Opaque filling very poor, shows only lowermost portion of renal pelvis continuous with ureter of normal diameters and position to bladder.

RESUME: Significance of irregular surface of kidney questionable. Passages fairly normal. Non-visibility of left renal passages not explained.

Should function be impaired or excretion retarded the pelves and ureters may be visualized very faintly, or not at all, even after many hours.

The x-ray technic is that usually employed in roentgenography of the urinary tract.

During the injection of the preparation, several patients complained of pain, dull in character, at the site of the injection, which was referred to the shoulder on the same side, and which gradually disappeared; sensations of heat and throbbing in the head were also noted. Occasionally there was paresthesia of the finger tips, dryness and severe thirst. Also, almost all of the patients noticed an urgent desire to micturate preceded by a bearing down sensation and heat over the bladder and genital regions. The symptoms of nausea, vomiting, collapse and iodism were not observed in any of the patients.

While there is no doubt that the employment of uroselectan will prove of great value in selected cases, we do not, however, feel that cystoscopy and ureteral catheterization will decrease in importance. There still remains considerable information to be obtained from cystoscopy, with the actual visualization of the changes which occur in the mucosa of the bladder, secondary to pathology in the upper urinary tract. In fact, some diagnoses are almost entirely based upon

Fig. 11

Fig. 12

Fig. 11. Case 11, J. F., male, aged 48. Chief complaint: Frequency, hematuria, and dysuria. Gonorrhea 25 years ago, followed by urethral stricture. Multiple perineal fistulae. Cystoscopy reveals papillary carcinoma of bladder involving trigone. Extensive edema, and infection present. Unable to visualize ureteric orifices.

Pyeloscopy: Normally functioning kidneys.

Urogram: RIGHT SIDE: Kidney outline not recognized. Opaque filling very unsatisfactory. Usual outlines missing. Appears like dilated lower part of renal pelvis. General enlargement of entire ureter, also increase of length in lower portion, causing doubling upon itself.

LEFT SIDE: Lower half of kidney outline plainly visible. Seems small for this size of patient. Position satisfactory. Opaque filling decidedly irregular but termini and minor calyces well shown. Major calyces seem greatly dilated and cannot be well differentiated from the enlarged renal pelvis. Enlargement continues downward into upper portion of ureter which is probably enlarged throughout its length as the lower portion, which is visible, seems greatly increased.

RESUME: Pathology indicated on both sides; bilateral hydro-ureter, hydronephrosis.

Fig. 12. Case 12, J. H., male, aged 60. Chief complaint: Acute retention following period of frequency and dyuria.

Pyeloscopy: Both kidneys functioning normally.

Urogram: RIGHT SIDE: Kidney outline plainly visible, satisfactory size, shape and position. Renal filling, fair. Opaque filling satisfactory in upper and middle calyces. Not so well shown in lower passages. Renal pelvis smooth and regular. Tapering continuous with ureter. Followed to lower lumbar.

LEFT SIDE: Entire circumference well shown. Slightly less regular or reniform in shape than usual. Opaque filling does not disclose the entire urinary passages. Apparently shrunken calyces and renal pelvis, continuous with ureter of normal course and diameters.

RESUME: Unsatisfactory filling makes interpretation difficult. Probably normal.

the impression one receives through observation of the bladder and the ureteric orifices, together with ureteral catheterization, even before the pathologic alterations are demonstrable on the pyelogram.

Important information regarding function and anatomical configuration of the urinary tract may be elicited with intravenous urography. Yet, cystoscopy and ureteral catheterization, to discern the source of blood, pus and organisms, must be resorted to. Also, segregation of the urine and information relative to the sound kidney must be obtained before one can decide on the removal of its pathologic mate.

Unfortunately, where we would particularly benefit by its use, as in cases of advanced renal tumor, tuberculosis, pyonephrosis and others, we find it of little value because of impaired renal function and diminished excretion. Its administration in cases of suspected ureteral calculi is not quite as beneficial as the introduction of a catheter. The sensation perceived on meeting the obstructing object greatly facilitates the diagnosis. Catheter pyelo-ureterography, as well as dilatation and the injection of oil may be performed simultaneously. Should there be a great deal of retention and infection, ureselectan may even fail to cast a shadow.

In ureterography, where the introduction of a ureteral catheter and forcible distention may cause pain and distortion with the obliteration of diagnostic essentials, uroselectan has its value. It renders a physiological ureterogram, as well as a demonstration of function.

Where cystoscopy and ureteral catheterization are contra-indicated, the employment of uroselectan offers valuable data regarding the following:

1. Function, which may be
   (a) Normal.
   (b) Delayed.
   (c) Absent.
2. Anatomical configuration of the kidney, pelvis and ureters.
3. Dynamic function of the pelvis and ureters demonstrating
   (a) Atony.
   (b) Emptying time.
   (c) Abnormalities.
4. Cysto-radiogram.

When the diagnosis rests upon the appearance of the minor calices, where the earliest pathological manifestations occur, uroselectan fails to give as clear or as sharp a roentgenogram as the method now employed. The reason for this is quite apparent. The latter depends upon the injection of an opaque solution, which fills and distends the pelvis and calices resulting in a distinct line of demarcation between the renal parenchyma and the pelvis of the kidney. On the other hand, uroselectan does not distend the pelvis or calices, and the resulting contrast is not as marked, nor are the minor calices as sharply defined. The excretion method of urography may require an alteration of our present manner of interpretation.

The time element should also be taken into consideration; with the patient prepared on the modern cystoscopic table, equipped for x-ray, a few minutes may suffice for the passage of a cystoscope, and the introduction of a ureteral catheter. The pyelogram may be obtained immediately regardless of kidney function. Uroselectan, however, requires at least from 15 to 30 minutes for the intravenous injection, and is followed by an indefinite period of time for x-ray, depending upon the ability of the renal parenchyma to excrete the substance.

In closing, we wish to state that we believe uroselectan to be a marked advance in the armamentarium of urologists for aiding diagnosis in certain selected cases, but hardly feel that the future of urology will be relegated to the x-ray laboratory, nor that the procedure of pyelography has become so difficult that the introduction of uroselectan will automatically displace direct pyelo-ureterography.

The insertion of a catheter and the gentle introduction of a few cubic centimeters of an opaque solution into the ureter or kidney pelvis for a pyelo-ureterogram, at the time of observation, still appeals to many urologists as the method of choice.

We are indebted to Drs. Chas. F. Read, S. D. Wilgus and Koenig for the courtesy and assistance extended to us at the State Hospital, Elgin, Ill., where most of the material for this article was obtained, and to Drs. Edward S. Blaine and N. S. Zeitlin for the interpretation of the roentgenograms. Also, to the others who assisted in the preparation of this paper, we

should like to express our sincere appreciation.

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PROBATION—THE FIRST LINE OF DEFENSE*

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In August of last year I was made State Probation Officer and I was considerably amused, after my appointment was announced, to find that the young blades of Springfield got the impression that I was the State Prohibition Officer and asked if I had to carry a gun. If there were such a person his duties would doubtless be the exact opposite of mine. It seems to me that most prohibition officers are active in filling the jails while my job as State Probation Officer is, as far as possible, to render jails unnecessary.

I have the distinction of being one of two women in the United States who are serving in this capacity, Indiana's probation being administered also by a woman. In fact, so far as I know there are only three states having State Probation Officers: Illinois, Indiana and Rhode Island. In the other states, and I regret to say that there are not many using probation as they should, it is administered through secretaries of commissions or other branches of state service.

Not only the State of Illinois, but the Federal Government is confronted with a staggering prison problem, and while the ardent wets may feel that this is due entirely to the operation of the 18th Amendment, sober thinking persons recognize that it is *more* far reaching and far more serious. The prisons of the nation are increasing their capacity whenever possible and are yet unable to keep up with the demand for more cell room. Those prisons in which men are crowded and herded together, where great dissatisfaction has of necessity prevailed, have been the scenes of riot, fire and bloodshed and terrors unspeakable. Human beings cannot live together in such close quarters without making trouble. It speaks splendidly for the management of our Illinois prisons that we have so far escaped these riots.

Illinois is now engaged in a building program at its penal institutions amounting to about $1,500,000, which includes added cell room at Pontiac, Chester and Joliet for 3,000 more prisoners and the new Reformatory for Women at Dwight, which will eventually cost $3,000,000. As is obvious, this Illinois building program involves an enormous expenditure of public funds felt by the individual in the increase of taxation, but this is perhaps the least important factor in the problem. Relatively few people in their busy lives stop to consider the aims and purposes of this great and costly public machinery or to consider whether it is accomplishing the purposes for which it is designed.

Some of us have the idea that jails and prisons are merely built for the incarceration of individuals dangerous to the public, thereby affording such protection to the public as might be obtained from the incarceration of rabid animals. Others seem to believe that the penalty imposed upon the criminal will cause him to emerge from the prison a chastened and penitent person. The idealistic prison reformer has looked forward to the day when prisons will be so conducted that they will accomplish reformation rather than impose mere brutal punishment.

*Delivered at General Session of Illinois State Medical Society, Joliet, May 20, 1930.

Those familiar at first hand with the operation of prisons recognize their reformatory powers or lack of them and that a prison sentence ofttimes transforms a casual law violator into a hardened enemy of society. Since, obviously, prisons do not incarcerate all men for life, sooner or later many of these hardened malefactors are liberated to prey upon society.

Our daily newspapers show us that a very large percentage of crime is committed by the hardened graduate of our penal institutions. These graduates who are experts in crime, and the majority of whom are between the ages of 16 and 25, have received their primary course in the schools for delinquents; their high school training in state reformatories and have obtained their college degrees in the state prisons.

Without being mawkishly sentimental, students of crime, criminologists, have come to recognize that brutal punishment for brutal crime does not often bring about reform; that a mere desire for vengeance has no place in the government of a great and enlightened state. Out of this has come the belief that firm and careful guidance with due consideration for human weaknesses may lead the derelict back to a reasonable place in society.

This idea has reached a rather high state of development in Illinois in what is known as its parole system, a system which is not equaled by any other state in the Union. However, these subjects of parole have acquired the stigma and undergone the demoralizing influence of conviction and incarceration with the incorrigible and pathological criminals, a condition which might have been prevented in many cases if probation could have been properly administered.

Perhaps it would be just as well to define probation and parole at this time and so emphasize their differences. Probation is the method by which the community, through its courts, seeks to reform, supervise and take care of offenders without imprisoning them and is especially indicated with young people and those not hardened in vice and crime, and with first offenders whose offense is not too serious. It is a voluntary arrangement between the offender and the court. Parole is a grant of liberty, as it were, under supervision after imprisonment and before the full term of sentence has expired.

In other words, probation is at one end of the correctional system and parole at the other; probation is the first line of defense and the stronger this defense is built, the firmer probation is established, the less need will we have for jails and prisons and for the parole system.

Parole is the effort to rehabilitate and at the extreme other end from this salvaging of the wreckage stands probation, which represents the modern conception of the "prevention of the criminal." Which then is cheaper—to prevent or to salvage—to neglect and then try to reform—to aim to keep out of jail or to build more and bigger and better prisons and maintain a parole system, all at the expense of the taxpayer?

I wonder if you taxpayers realize that 50 cents on every dollar you pay into your state treasury on general taxation goes to take care of the wards of the State? Do you feel you are getting your money's worth? During the first or present biennium of this administration the sum of $84,000,000 is due the State from general taxation and out of that sum $30,000,000 is allocated to the Department of Public Welfare for running expenses and $10,000,000 for building purposes. When we stop to think that our correctional and penal institutions are all overcrowded and that we are receiving prisoners at the rate of three a day, or 1,000 a year, without a corresponding decrease in dismissals or on parole, we realize that a large part of our taxes is going to take care of a situation which, in a large measure, might be prevented.

We Americans seem to be so much more willing to spend money on salvaging than on prevention; on trying to find the horse after he has been stolen, rather than in putting a good firm lock on the door in the first place. We are niggardly in spending money to prevent the perfectly obvious from happening and lavish on expenditures which might have been prevented.

The aim of all good probation workers is to keep their probationers out of jail and such workers claim 75 per cent. satisfactory results; claim that three out of every four make good. Of course this means that the judge of that court has been selecting his cases for probation with care and not in a hit-and-miss way; that investigations have been made thoroughly by the officer and that the supervision extended is intelligent and dependable.

In those states where figures on probation are

available, as they are not in Illinois because we have had State supervision less than a year, the service is found to cost about $30.00 per year per person. We do know, however, that it costs $300.00 per year to keep an offender incarcerated in our penal and correctional institutions or ten times as much as probation costs. The probation period is seldom extended beyond two years though in some states it may be extended indefinitely.

To be conservative, we will say that the average prison term is five years. In many states it is ten. Here we have a cost of $1,500 for incarceration against a cost of $60 for probation, or 25 times as much. In addition to that we must add the economic loss to society presuming the man might have made good on probation. He has become a liability, and perhaps a permanent one, when he might have been made into an asset. Let us not forget his family which may have become a charge upon the community, either in whole or in part. If a probation officer receives a salary of $1,800 per year and he saves only 6 adults or juveniles from incarceration in one year and restores them to normal life, he has made his salary and saved the State, perhaps thousands of dollars in the future.

As an example of the inequalities of justice I should like to recall to your minds an incident which appeared in the newspapers last fall. In one of our prominent central Illinois counties two men were tried at the same term of court. One had wrecked a bank of two or three hundred thousand dollars and had nearly wrecked the community. The other man had stolen some chickens and disposed of them for $15.00 because, as some of the women in the county told me, his family was practically starving. Furthermore, they said, it was his first offense. I cannot substantiate all these statements. Perhaps the visiting judge who sat on the case had information about which I do not know, but on the face of it, it does not seem reasonable nor fair to give the man who stole the chicken from one to fourteen years in Chester and the other man who stole $200,000 one to ten years.

It would seem that probation might have been at least tried. As a result of what seems like an injustice to me, you taxpayers are going to share in the expense of $4,200 to take care of that man for fourteen years unless he is released, and the county is probably going to help support the family he left behind unless they can ship them to some other county to be taken care of.

I have told you what Illinois is paying for increased cell space and now I will tell you what is making that increase necessary. In the 16-year period between 1913 and 1929 the population of our state increased 22 per cent. while the population of our penal and correctional institutions increased 130 per cent., or six times as much. This increase has been greater during the last year than in any other period of our state history and we are receiving offenders at the rate of three per day.

Professor August Vollmer, head of the Police Research Department of the University of Chicago, a man who has done some outstanding work along this line in California, made the startling assertion last winter that one in every 120 American citizens is a criminal; that there are 1,000,000 "dyed-in-the-wool" criminals in the United States, or 61,000 in Illinois. Experts tell us that one child out of every 100 may be considered a potential delinquent, so based on the 1928 population of the State we have over 44,000 such children. These two groups constitute a menacing army of criminals and embryo criminals, possible murderers, bandits, burglars, rapists, prostitutes, advancing like an army across the State of Illinois, enemies of society, a social and financial problem, straining every resource of the body politic.

Here in Illinois probation operates under a permissive law which means that the county and circuit judges can decide whether they will or will not administer probation and permits the county boards to determine whether or not they will make the necessary appropriations. There are no uniform standards because each county is a law unto itself. Some counties have interested judges who are administering probation in a very fine way. Others, twenty in all, have no form of probation whatever and many others are adminstering it so poorly that it is almost useless.

As you perhaps know, county judges administer juvenile probation under which term come girls up to 18 and boys up to 17 while adult probation is handled by judges of the circuit court. In Chicago and Cook County there are

various other courts which administer probation.

Massachusetts is the outstanding state in the use of probation which they have had for 52 years, 39 years of which time it has been mandatory or compulsory and which means that every court with criminal jurisdiction must use probation where obviously indicated. Every criminal court has one or more probation officers acting under a central state supervision which is itself a feature of the judiciary. The result is that Massachusetts has not added any cell room to her penal and correctional institutions in the last 25 years, but on the contrary, has actually abandoned some she had. In other words, the State has not spent one dollar on increasing the size of these institutions in over a quarter of a century. The crime rate in Massachusetts is said to be the lowest in the country and that of Boston the lowest of any city. During 1928 homicides in Chicago increased to 15.8 per 100,000 while those in Boston increased to 3.8 per 100,000.

The experience of Massachusetts indicates that the proper use of probation assures a lower crime rate, greater security for the citizen and a safer place in which to live. In other words, that the higher the percentage of probation in selective cases with proper supervision of employment and home conditions by qualified probation officers the less crime there will be.

At the present time we have 300 probation officers in Illinois listed in our files of whom 143 are serving outside of Cook County. Doubtless the Cook County personnel has been somewhat decreased recently on account of the financial situation. The majority of the down-state officers are only on part time duty and paid accordingly. Many of them are volunteers and while volunteer service can be made effective if directed by trained officers it is not worth much if undirected. Most of them have not profited by the experience gained in the work, have not sought to train themselves or been trained by the judges under whom they are serving. In other words, a large number are working without much purpose, rhyme or reason. Under such administration, and probation practice is as much administrative as judicial, it is failing to gain the results it can and should. Many probation officers are proving as unsatisfactory as the same type of person formerly employed as a lay health officer.

There is no question but that many Illinois counties, particularly those dependent on agriculture and coal production, are having financial difficulties and this reason is given for not establishing probation but more frequently than lack of funds I have found that lack of understanding of the underlying principles of probation or the lack of a progressive spirit on the part of public officials is the reason for inactivity.

This excuse of lack of funds or the plea of economy is ill founded, inasmuch as a niggardly attitude on the part of counties in the matter of probation will inevitably be compensated by increase of taxes for the punishment of the criminal. A large part of the 40 millions allocated to the Department of Public Welfare about which I have told you, is expended for the care of delinquents, incorrigibles and criminals who have arrived at this condition through circumstances which might have been prevented, in a large degree, by intelligent action in the home community.

On account of the record which probation has made and is making in such states as Massachusetts, New York, New Jersey and Indiana and the fact that it also is now used in Illinois in eighty counties, though without uniformity or standards, assures me that it will become effective as soon as we have a new state-wide law passed, which we hope to do next year. Public sentiment is being awakened to the possibilities that probation offers and is responsive to our pleas for support and assistance. With this arousing of public opinion will come a demand for improved service through the courts and a trained and intelligent group of probation officers. The prevention of delinquency and the salvaging of human lives are too important to be entrusted to the incompetent, the indifferent and the unintelligent person.

The more progressive judges of the State are almost unanimous in recognizing the value and the necessity for probation officers in the administration of justice and the prevention of crime. One enthusiastic judge remarked to me that an intelligent probation officer is as necessary to the success of his work as is the competent nurse to the physician, and every physician will recognize that while the competent nurse is an asset the untrained, incompetent may prove a most costly liability.

Probation is not designed for every offender nor for every offense any more than quinine is indicated for every disease, and the wise judge, like the wise physician, makes his diagnosis of each case and plans his treatment accordingly. Experts tell us that there is no one cause for crime and that there can be, therefore, no one panacea that will cure or prevent it, just as there is no one cause for physical disease or one universal cure. We also know that probation is not a form of leniency that applies to every situation; that it was never intended for burglars or pickpockets or for those who resort to crime as a business.

Probation stands in the same place in social conduct as preventive medicine occupies in the field of medicine. Unfortunately, preventive measures are rarely spectacular and public attention to such measures, however valuable, is very difficult to attract. An expert in fire prevention says that he can draw the entire community to witness a spectacular and wholly unnecessary fire but that he can hardly fill the town hall for public instruction in how to prevent fires.

Even in your own profession of medicine I am told that a program on disease prevention is never as fully attended as a meeting devoted to the question of the salvaging of the sick. At any rate, preventive medicine, as it stands today, is the result of a slow, laborious and persistent education and I am not enthusiast enough to expect that crime prevention will prove instantly and irresistibly interesting. Human conduct is dependent upon many mixed and complex factors, prominent among which must necessarily be mental and physical ill health and the clear understanding and adequate treatment of human delinquency must depend in large measure upon an intelligent appreciation of the effect of illness on the individual.

On this account the criminologist and the probation officer must necessarily look to the medical profession for guidance and I am firmly convinced that in this field the physician of the future will find one of his greatest opportunities for service to society. One of the most concrete examples of the necessity for medical guidance in dealing with the offender was found a short time ago in Great Britain during the prevalence of sleeping sickness or encephalitis lethargica. The peculiar changes in disposition incident to this disease and with which, of course, you are more familiar than I, lodged 108 individuals in police stations of England and in some instances these unfortunates were given sentences and penalties for their illness. The recognition of the character of the disease by intelligent physicians who were friends of the court led to precautions which rendered such shocking miscarriage of justice impossible in the future.

Modern clinical treatment of the juvenile delinquent—the treatment based on modern psychology—concerns itself more with the offender than with the offense; more with the question of "Why did you do it?" than "What did you do?" Not so much with punishing as trying to find the cause for the misdemeanor, the reason for the delinquency and removing, if possible, the contributing factors. Nor is this treatment based on foolish sentimentality nor a desire to be lenient. Probation, in the real sense of the term, should never be used without careful investigation of each case and with the expectation at least that the probationer will make good. He is given his "chance." If he fails on probation then it should be denied him again unless there are extenuating circumstances.

With the machinery for adult and juvenile probation gradually developing in our more progressive counties there is coming an unusual opportunity for the medical profession to render a service of inestimable value to society. The answer to this all important question of "Why did you do it?" is often only to be found in a clear conception of the individual's physical and mental health. Without this medical advice and assistance many people are punished or sent to prison who really should be in a general or psychopathic hospital. I have had judges tell me that they needed just such assistance in the disposition of cases and that they have had to send offenders to jail when they seriously suspected they were mental or physical cases.

Medical men will understand, as no layman and no judge can understand, the peculiar changes in temperament—irritability, irascibility, depression, hopelessness, delusions—which radically alter human conduct and which are dependent upon abnormal physical and mental conditions. Of course, with the definitely feebleminded, nothing can be done in the way of probation.

Probation is not a new thing—it is over fifty years old—it has just not been given a fair chance in Illinois. It offers more hope of decreasing crime than any other arm of the correctional service. It promises more in the way of results than anything else on the horizon of social conduct today. But to secure the very best results from probation practice—to go as far as we should like and as straight, we know we must have medical advice and counsel. Such assistance, when it is of the right kind, will eliminate many mistakes in giving probation, will make work easier for the judges and will give society a greater measure of protection from irresponsible people who should not be at large.

At the present time such service is being rendered to some extent in those counties where the Institute for Juvenile Research holds its conferences, some eleven in all. While these conferences may be extended and will be of infinite value in creating public sentiment and in bringing to counties specially trained psychiatrists, it is not to be expected, nor is it probably to be desired, that the Institute could furnish sufficiently constant or continuing service to meet the daily needs of the active courts. It is the opportunity of the local medical profession to meet this need and, if it will, the local medical profession can do it better than any other agency.

If county medical societies and local physicians will become sufficiently interested to provide for their own courts such medical guidance as the intelligent administration of justice requires it will serve the desirable purpose of preventing a multiplicity of public officials to give this service.

There will be need for the highly specialized service of the Institute of Juvenile Research in affording, if you will, expert consultation in unusual cases and this service may be desired by the court or his medical advisers. The Institute will always prove invaluable in bringing to the local medical profession the advances in this rapidly developing branch of medical service and of standardizing the methods and procedure in this work.

We often feel, in dealing with probation and the medical aspects of probation, that the 102 counties of Illinois are talking each in its own peculiar language unintelligible to the other courts of the State. The Institute, the county medical societies and especially the Illinois State Medical Society may serve admirably to give to Illinois uniformity of understanding.

In the Institute Staff Conferences held bimonthly in eleven counties and with which many of the public spirited physicians of Illinois are familiar, the procedure has been developed with proper deference to the medical profession and with the recognition of the part that the medical profession must play in the future.

Where there is no family physician, which occurs in about one-third of the cases presented, the county medical society is asked to appoint some qualified physician to do this work and the fee is paid by the county. The physicians making the original diagnosis are always invited to the staff meetings when the cases are discussed and every effort is made by Dr. Schroeder and his assistants to cooperate with the local physicians.

The policy of the State Medical Society which has been especially apparent during the past few years of taking the initiative in public affairs requiring medical guidance rather than allowing the public to take the lead, gives gratifying assurance to those of us who are struggling to establish standards in probation of what we may expect through county medical societies in the future. It can hardly be expected that each court in the State could find in the medical societies in his community a trained psychiatrist nor is this essential if there can be in each county in Illinois physicians who will master the rudiments of modern psychology and psychiatry, men in good standing in their medical societies and having the confidence of the public. If every court can have such assistance the problem of the prevention of crime is on its way toward a solution. Such physicians recommended or designated by the medical society could serve as the unofficial advisers and friends of the court and render most invaluable service.

This, gentlemen, is the program I am submitting to you and will submit to the judiciary of the State; the cooperation, which, as State Probation Officer and as a representative of the Department of Public Welfare, I am urging you to help me establish and one which I am convinced will have a far-reaching effect.

What We Need in Probation

1. We need probation service in every court trying criminal as well as other cases.

2. Better paid and better trained probation officers. I want to raise the standards in every way.

3. Enlarged facilities for physical and mental examinations for problem cases. Cooperation between physicians and the courts and officers trained to utilize such facilities.

4. More attention to the causes of crime and their elimination. More preventive work, more volunteer helpers for the Probation Officer who will find and report delinquency.

5. A higher type of probation practice, including:

(a) Thorough investigation before probation is granted.

(b) A thorough study into causes of delinquency in each case and a definite understanding of needs to be met in order to effect a cure.

(c) More intensive supervision.

(d) A prompt return to court for those who do not make good.

(e) No lifting of probation until term is finished.

(f) Careful records in each case.

THE ENDOCRINES IN GYNECOLOGY WITH SPECIAL REFERENCE TO DYSMENORRHEA AND OTHER MENSTRUAL DISORDERS*

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During the past years the advance of endocrinology has been so rapid, that a practitioner can hardly keep up with it. Woman is more complicated than man in the correlation of the endocrine system and in her there are more noticeable clinical manfestations of the disturbance of the endocrine balance. Woman is more subject to emotion, pays more attention, thinks more of her sexual sphere, and the slightest disturbance of her regular activity leads her astray from the normal path of her every-day life.

The subject of this paper is the influence of the endocrine glands on dysmenorrhea and other menstrual disorders.

Our problem is also to correlate all of the better known gland diseases, their hyper- and hypofunctions with the sexual sphere. We have attempted to determine to what extent menstrual disturbances depend, not upon one diseased gland, but upon a group of glands. Besides, we have been interested in the discorrelation of the glands on exclusion of the diseased gland and the resulting disturbance of the endocrine balance. Schematically, we shall attempt to review the facts that are familiar to us concerning the physiological and pathological functions of the glands.

PHYSIOLOGICALLY

Pituitary Body: Anterior lobe: Controls growth, stimulates follicular ripening. (H. Evans.) Posterior lobe: Alpha hypophamin (vasopressin) rises of blood pressure; beta hypophamin (oxytocin) stimulates and contracts the uterus. Posterior lobe also galactogogic by way of contraction smooth muscle of milk ducts.

Pineal: No evidence of influence of normal menstruation.

Thyroid: Influence on growth and development of genitalia. Thyroid enlarged during puberty and menstruation.

Parathyroid: Enlarges during menstruation.

Thymus: Influence on development of genitalia.

Mammary Gland: Regulates ovarian activity. Stimulates lactation.

Pancreas: Pancreas and sexual glands are synergists. (M. Serdukov.)

Suprarenal Gland: Cortex enlarges during pregnancy.

Ovary: Stimulates and regulates sexual development.

(a) Follicles produce premenstrual changes, induces sexual response. (E. Allen and E. Doisy.)

(b) Lipamin: Stimulates premenstrual and menstrual changes in mucous membrane of uterus. Lipamin present in early corpus luteum.

(c) Luteolipoid: Inhibits menstruation. Present during retrogression of corpus luteum. (Seitz, Wintz.)

(d) Interstitial cells?

Corpus Luteum

PATHOLOGICALLY

Pituitary Body: Anterior lobe—hyperfunction: Acromegaly, gigantism, menstruation not markedly changed. Later when regressive pathologic changes occur in acromegaly and gigantism, hypofunction results and amenorrhea and sterility take place. (W. P. Graves.)

Frohlich's type of hypopituitarism—amenorrhea.

Pineal: Destruction by tumors leads to premature maturity, infantile giant growth, epiphyseal obesity, hyper-genitalism characterized by menstruatio precox, premature development of the mammary gland, ex-

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ternal genitalia, hair growths on the external genitalia and axillary cavity. (M. G. Serdukov.)

Thyroid: 1. In *adolescent goiter* (if negative for symptoms of thyroid disturbance) menstruation is usually normal. In hyperthyroidism menstruation often delayed, irregular and scanty.

In hypothyroidism—tendency toward menorrhagia.

2. In *exophthalmic goiter* — menstruation frequently normal. In severe cases menstruation is irregular and scanty. In most severe cases—amenorrhea.

2. In *paranchymatous goiter and simple adenoma* menstruation usually normal. If there is evidence of hypothyroidism, menorrhagia may be present. (H. Gardiner-Hill and I. F. Smith.)

4. In *myxedema*—before the menopause menorrhagia commonly present. In some cases menstruation completely ceases. (W. Falta.)

Parathyroid: In non-pregnant women, disease of the parathyroid probably does not affect the sexual sphere. There is a tendency to spasmophilia and tetanic convulsions in pregnancy and motherhood. (B. Zondek.)

Thymus: Tumors of thymus, leads to hypoplasia of genitalia. Hyperactivity, causes infantilism and sexual immaturity. In hypoactivity, result is precocious sexual development.

Mammary Gland: In hyperactivity amenorrhea may be present, due to inhibiting influences on the ovary. Hypoactivity may cause menorrhagia (due to disovarism).

Pancreas: Pancreatic diabetes may produce functional disturbances such as amenorrhea, hypomenorrhea, decreased sexual instinct and pruritis vulvae. Ninety-five per cent. of these cases are usually sterile. (M. Serdukov.)

Suprarenal Gland: Hyperfunction of the cortex leads to the premature development of the body, and secondary sexual character (pubic hair growth, etc.); also may develop mustache, beard, hirsutism; and pseudohermaphroditism. Psyche is not disturbed. Sexual desire is not awakened. Internal genitalia of normal size. Hypofunction (both suprarenal systems) known as Addison's disease, if occurs in children prevents menstruation. If in adults leads to amenorrhea and atrophy of sexual glands. (W. Falta.)

Ovary: Hyperovarism leads usually to menorrhagia or metrorrhagia, and dysmenorrhea. Premature development of maturity, large skeleton, development of axillary and pubic hair in young and development of sex instinct. Good constitution and tendency to fertility. Thyroid decreased. Hypoovarism leads to retarded development of the body, lack of axillary and pubic hair, obesity, lowered metabolism, hypomenorrhea aand amenorrhea, sterility, pseudomyxedema and often goiter. Metrorrhagia can appear as a result of destructive changes in ovaries. (Dalché.)

Before proceeding to a description of the treatment, I should like to say a few words about certain other signs of endocrine disturbances. We do not know the normal amount of hormones in the blood circulation, their constancy or the enormous dependence of one hormone on the other. Only recently have experimenters been successful in throwing light on the sex hormone and in discovering its presence in the body.

Because of lack of knowledge, treatment is often groping, often producing good results but without clear reasons. Several diagnostic points are found in general infantilism, asthenism, and obesity. General infantilism is easy to diagnosis by retarded physical development. After sex maturity, the upper part of the body becomes longer than the lower part, the face is small, the teeth in the upper jaw are far apart. The chest is round with the ribs horizontal, and there is hypogenitalism.

Asthenia is characterized by emaciation, delicate bodily structure, thin nose, long and narrow chest and protruding scapulae. Cases of obesity of endocrine origin are thyrogenic and are characterized by deposits of fat in regions of the thighs, glutei, pubis and breasts, and general obesity—they occur in hypofunction of the thyroid gland. Hypophyseal fat principally is deposited on the hips, mons veneris and mamae and also appears in hypofunction. Besides, there are epiphyseal obesity in hyperfunction of the epiphysis and pancreatic obesity in hyperfunction; and ovarian obesity in hypofunction and dysfunction of the ovaries.

Metabolism is increased in hyperfunction of the thyroid, hypophysis and suprarenals. In hypofunction of the thyroid, the pituitary, suprarenals and ovaries it is lowered. (Falta.) Gardiner, Hill and Smith point out that "basal metabolism estimation provided confirmatory evidence of the degree of thyroid activity," and the type of menstruation varies with the degree of thyroid activity. In menstrual disturbances of endocrine origin these variations can appear in the form of amenorrhea, or oligomenorrhea, which are caused by the failure of the follicles to ripen, the stopping of follicular growth, and tumors of the ovaries. Polymenorrhea results from hastened follicular ripening. Menorrhagia probably results from insufficient contraction of the uterus. Jaschke and Pankow observed menorrhagia in the presence of very marked masturbation which can destroy the ovarian cycles that

has not yet been established, and in general can disturb the picture of bleeding where it is difficult to differentiate menorrhagia from metrorrhagia.

The type of dysmenorrhea which we observed was a primary type with spasmodic contraction of the internal and often external os, which is the cause of dysmenorrhea in many girls, who are otherwise in good health. The uterus of these girls is anteflexed and often retroverted. Some of them remain in bed during the pains and others are up. The pains usually begin at the onset of menstruation and continue from several hours to one or two days. Besides the local pains, the girls suffer from general nervousness, nausea, headache and pains in the lower abdomen which can irradiate to other parts of the abdomen. The majority of our patients are young—up to the age of twenty-three or twenty-five. Many of them are virgins. A. P. Graves, in giving ovarian preparations for treatment of dysmenorrhea finds that "the drug actually is effective in some beneficial but unknown way." Examining the majority of our patients before and after use of organo-therapy, we found in the majority of cases, a small uterus of somewhat hard consistency before menstruation, which, after administration of whole ovarian gland, or even more strikingly, ovarian gland mixed with others, became softer and larger, and in our opinion this softening of the uterus causes cessation of dysmenorrhea.

We also noticed that in many girls with dysmenorrhea the labia minora was enlarged and sometimes even slightly protruded over the large labia. At times only one of the minor labiae was enlarged and the other was entirely normal. This appeared in girls who were corpulent and sluggish. Enlarged minor labiae, if they are flabby, must be considered as the result of auto-erotism in the majority of cases. Of course, we clinicians cannot inquire into this owing to the delicacy of the question, but the few written questionnaires which exist in medical literature on this subject give us a rather inclusive picture of this habit. Thus, for example, Katherine Davis in questioning a group of 272 girls who recognized periodicity, found that only sixteen per cent. never masturbated. Fifty per cent. continued the practice of masturbation. In a group of 238 who recognized no periodicity, forty-two per cent. had never practiced auto-erotism and twenty-six per cent. practiced it at the time of the questionnaire. Impotence was found in 182 of the thousand questioned. Of these thousand, thirty per cent. suffered a nervous break-down at the time of menstruation.

Therefore, we believe that frequently repeated excitement by artificial manipulation and the consequent contraction of the uterus (show of mucous plug from the cervix) contracts the internal os and becomes the cause of the dysmenorrhea. If we look back we shall recall that among our patients there are some who complain of dysmenorrhea that commenced with the first menstruation and which continues until marriage, when it disappears. Others complain that dysmenorrhea has appeared a year or two after the beginning of menstruation and finally, a third group complain of dysmenorrhea from the beginning of the first menstruation which continues during married life. If we analyze these three groups we may suppose that the first group discontinued auto-erotism immediately after marriage. The second group began to practice auto-erotism some time after beginning of menstruation, and finally, the third group practiced auto-erotism at the time of the first menstruation and continued it during the time of marriage. It is interesting to note that in this last group of women the minor labiae are larger than in the other two groups. We believe that in some unknown way, auto-erotism exerts an influence on the endocrine glands, probably especially on the ovary. Otherwise how could we explain such beneficial results of the endocrine treatment for dysmenorrhae?

In turning to an analysis of the treatment of diseases and the discorrelation of the endocrine glands, we must mention pluri-glandular therapy, which often gives exceptional results. We know that some of the endocrine glands are of enormous importance, each independently of the others. For example, the removal of just one gland, the parathyroid, or pancreas, even leads to death. Besides, if one gland is diseased others also become affected because the balance of the endocrine system is destroyed. At the time in life when glands cease to work, for example, in the menopause, with the exclusion of the ovarian secretion, there is a shock to the organism, such as the disturbance of metabolism, irritability of

No.	Dysmenor.	Amenorr.	Oligomen	Polymen.	Menorrhag.	Metrorr.	Sterility	Sex Frigid	Treatment	Improved	Not Impr.	Remarks
1.	1	..	1	..	..	..	1	..	Mixed Glands Thyreo-Ovarian; Hum. Follic.	1	..	Dysmen. Ceased, Sterile
2.	1	..	..	..	1	..	..	..	Mixed Glands	1	..	
3.	1	..	..	..	..	..	1	1	Animal Folliculin	1	..	Pregnancy: Sex Response
4.	1	..	..	..	..	..	1	..	Mixed Glands Corpusluteum; Insulin	1	..	Pregnancy; Hyperemes. Gr.
5.	1	..	..	..	1	..	..	..	Mixed Glands	1	..	
6.	1	..	1	..	..	..	..	..	Animal Folliculin	1	..	
7.	..	..	1	..	..	..	1	1	Animal Folliculin	1	..	Normal Mens.; Sex Resp.
8.	1	..	..	..	1	..	1	..	Mixed Glands	1	..	Pregnancy
9.	..	1	..	..	..	..	..	1	Animal Folliculin	1	..	Menstr.; Sex Respon.
10.	..	..	..	..	..	..	1	..	Mixed Glands	Normal Menstra.	..	Vicarious Menstr.
11.	..	1	..	..	..	..	1	1	Animal and Human Folliculin Thyreo-Ovarian Gl.	Sex. Resp.	..	No Menstruation
12.	1	..	1	..	..	..	1	..	Pituitrin Cervix Dilated	1	..	Two Months Normal Flow
13.	..	1	..	..	..	..	..	..	Pituitrin Mixed Glands	7 Days Profus Flow	..	Thyroid Enlarged
14.	..	..	1	..	..	..	..	..	Agomensin	1	..	Menstr. 4 Days Duration
15.	..	..	1	..	..	..	..	1	Animal Folliculin	1	..	
16.	..	..	1	..	..	..	..	1	Agomensin Human Folliculin	1	..	
17.	..	1	..	..	..	..	..	..	No Treatment	..	..	Pituitary Tumor
18.	..	1	..	..	..	..	..	..	Pituitrin	1	..	Thyroid Enlarged
19.	..	..	..	1	..	1	..	..	Sistomensin	1	..	
20.	..	1	..	..	..	..	..	..	Agomensin	1	..	
21.	..	1	..	..	..	..	..	..	Agomensin	1	..	Ovaritis; Parotitis
22.	..	..	1	..	..	..	..	..	Mixed Glands	1	..	
23.	..	..	..	..	..	..	..	..	Corpus Luteum	Delivery	..	Previously 3 Miscarriages
24.	..	1	..	..	..	..	..	..	Agomensin	1	..	
25.	..	1	..	..	..	..	..	..	Agomensin	..	1	
26.	..	..	..	..	..	1	..	..	Sistomensin	1	..	
27.	..	..	1	..	..	..	..	..	Thyreo-Ovarian Glands	1	..	
28.	..	1	..	..	..	..	..	..	Agomensin	..	1	Laparotomy, 6 years Ago Amenorrhea 4 years
29.	..	..	..	..	1	..	..	..	Thyreo-Ovarian Glands Mixed Glands	1	..	Exophth. Goiter
30.	1	..	..	..	..	..	..	..	Mixed Glands	1	..	
31.	..	..	..	..	..	1	..	..	Sistomensin	1	..	
32.	..	..	..	..	..	1	..	..	Sistomensin	..	1	Case was Incomplete Abortion, Curettage
33.	1	..	..	..	..	..	..	..	Ovarian Gland Cervix Dilated	1	..	
34.	1	..	1	..	..	..	1	..	Thyreo-Ovarian Glands Cervix Dilated	Normal Menstr.	..	Still Sterile
35.	..	..	1	..	..	..	..	..	Ovarian Gland	..	1	Nervousness Relieved
36.	1	..	1	..	..	..	..	..	Mixed Glands	1	..	
37.	1	..	..	..	..	..	1	..	Mixed Glands	No Dysmen.	..	Still Sterile
38.	..	1	..	..	..	..	..	..	Pituitrin	1	..	Corpulency
39.	..	1	..	..	..	..	..	..	Pituitrin Mixed Glands	1	..	Adolescent Goiter
40.	..	..	..	1	..	1	..	..	Sistomensin	1	..	
41.	1	..	..	..	..	..	..	..	Mixed Glands	1	..	
42.	..	1	..	..	..	..	..	..	Animal Folliculin	1	..	
43.	1	..	1	..	..	..	1	..	Mixed Glands; Hum. Folliculin Thyreo-Ovarian Glands	No Dysmen.	Still Sterile	Corpulency
44.	1	..	..	..	1	..	..	..	Mixed Glands	1	..	
45.	..	..	..	..	..	1	..	..	Sistomensin	1	..	
46.	1	..	..	..	..	..	..	..	Mixed Glands	1	..	
47.	..	1	..	..	..	..	..	..	Agomensin	Menstr.	..	Dysmenorrhea, Diabet.
48.	..	..	1	..	..	..	..	..	Agomensin	1	..	
49.	..	1	..	..	..	..	..	..	Mixed Glands	1	..	Menstruation Normal 6½ Months Later, Fibroid and Menorrhagia
50.	..	1	..	..	..	..	..	..	Mixed Glands	1	..	
51.	1	..	..	..	..	..	..	..	Ovarian Gland	1	..	4 Months Continually
52.	1	..	1	..	..	..	..	1	Mixed Glands, Thyroid Gl. Pituitrin Human, Folliculin	Sex Response Mensturat.		Exophth. Goiter
53.	..	..	..	..	..	..	..	1	Human Folliculin	1	..	
54.	..	1	..	..	..	..	..	..	Agomensin	..	1	Hyperthyroidism Nephritis
55.	..	..	..	..	..	..	..	..	Ovarian Gland	1	..	Hot Flushes
56.	..	1	..	..	..	..	..	..	Mixed Glands	..	1	Had Laparotomy

Improved 44; Partially Improved 4; Not Improved 7; Not Treated 1.

Figure 1. Our diagram represents fifty-six cases of various anomalies of endocrine origin. About twelve cases are not cited. Of the fifty-six cases forty-four improved; four partially improved; seven did not improve and one was not treated. One case of amenorrhea was cured but dysmenorrhea accompanied the menstruation. Of the fifty-six cases, there were eighteen of *dysmenorrhea.* Of these, five complained only of dysmenorrhea; four of dysmenorrhea and menorrhagia; three of dysmenorrhea and oligomenorrhea; two of dysmenorrhea and sterility; four of dysmenorrhea, oligomenorrhea and sterility; one of dysmenorrhea, oligomenorrhea and sexual frigidity. Of eighteen cases of *amenorrhea,* there were sixteen cases of only amenorrhea; one of amenorrhea and sexual frigidity, one of amenorrhea, sterility and sexual frigidity. Of fifteen cases of *oligomenorrhea,* five were of that alone; there were two cases of polymenorrhea; five cases of menorrhagia; six cases of metrorrhagia; eleven of sterility and eight of sexual frigidity.

the neurovascular apparatus, acroparesthesia, feeling of pressure in the chest, depression and sometimes pruritus, in climacterium. But usually in a short time the balance of the endocrine system is restored. If, as a result of disease, the glands are inactive at a time when they should be active, or if hyper or hypofunction of the gland appears, the organism suffers very seriously, and in the majority of cases, the diseased gland destroys the harmony of the endocrine system (for example, diseases of the thyroid, suprarenal cortex, or both suprarenal system, etc.).

Owing to the fact that other endocrine glands can be affected by the disease of one gland, the idea of pluriglandular therapy arose. Of course, in applying organotherapy for the treatment of dysmenorrhea and menstrual disturbances, we must entirely exclude other causes for these anomalies, such as tuberculosis, chlorosis, diabetes, morphinism, infectious diseases. Besides this, in abnormal uterine bleeding, we must *always* remember the possibility of malignancy.

In amenorrhea due to hypophyseal obesity, we give daily pituitrin injections over a period of ten to fifteen days. In menorrhagias, due to hypothyroidism, we give one-fourth to one-half grain thyroidin beginning ten days before menstruation, two or three times daily, and iodin. In amenorrhea due to hyperthyroidism we inject pituitrin daily for a period of eight to ten days, reestablishing discorrelation between the hypophysis and ovaries. We also give mixed glands. We give extracts of mammae in uterine hemorrhages if they are caused by dysovarism and also in hemorrhages from the uterus caused by small benign tumor, subinvolution of the uterus, or in climacterium.

Preparations of the whole or part of the ovarian gland or mixed glands were used in amenorrhea and dysmenorrhea of ovarian character. In amenorrhea, on the basis of hypofunction of the ovary and infantile uterus, we used folliculin ovarian hormone or agomensin (lipamin). In metrorrhagia and menorrhagia, we used sistomensin (luteolipoid); (hypodermic injection is most effective). In dysmenorrhea, mixed glands should be given twelve to fifteen days before menstruation, and on the first two days of menstruation. These same mixed glands have also given good results in cases of nervous breakdown caused by disturbances of menstrual regularity. This treatment is continued, being given ten or twelve days before menstruation the following month; seven or ten days before menstruation the third month; five days before, the fourth month. The fifth month is optional; if the dysmenorrhea has disappeared the treatment should be stopped and the patient put under observation.

Excellent results are obtained by the injection of follicular ovarian hormone into mammals which induces oestrum not only in normal animals, but in castrated ones, together with enlargement of the vagina and uterus, tubes and mammae. E. A. Morrell by injection of folliculin into six monkeys of the breed Macacus Rhesus one year of age, caused premature maturity and menstruation. Carl J. Hartman states: "that the Macacus Rhesus begins to menstruate at four years of age, every twenty-six days with the same regularity as every woman thinks she menstruates."

It is interesting to examine the use of this hormone on women. In our practice we used folliculin from the human placenta, follicular fluid of the ovaries of the sow, and sheep. Units are varied, five, twenty, twenty-five, forty. Injections were given daily until the wished for results were achieved (menstruation and sex response) or if, when used in amenorrhea, menstruation did not appear, the injections were continued for ten days, then discontinued, and followed by another ten day course of daily injections. We injected forty units daily during this time, a total of eight hundred units, and never met with unpleasant results. Recently, in

some cases, we gave lipamin (agemonsin) in the intermissions.

We began to use follicular hormone from the human placenta in October, 1927, and later used others. For the past eight months we have been using menformon (40 units per ampule). This time is yet too short to give percentage and the number of patients who have used it in the dispensary and private practice is yet not great, but we report our observations and although they are far from the brilliant results obtained from their use on mammals, we still have obtained a number of results from the injection of follicular ovarian hormone in women, absolutely deserving of attention.

In working with folliculin, we noted that folliculin acquired from the human sources had a much weaker effect than folliculin acquired from animals. With folliculin from the human placenta we could only call out sex response, and in very rare cases, had no results whatever. In the use of folliculin from animals (menformon), we always obtained sexual response in cases of sexual frigidity. At times this was so marked that we expect to take great care in the future in using folliculin in young girls.

In a case of amenorrhea of almost two years' standing, menformon was used daily for three days and on the fourth day menstruation appeared and continued for five days. The next month menstruation appeared without menformon. Then for five months there was no menstruation. Menformon injections were again begun and continued for ten days—400 units. Menstruation did not appear. There was a ten day intermission, during which agomensin was given, three tablets per day. Again hypodermic injections of menformon were given and on the eighth day of the injections menstruation appeared and lasted for eight days. On bimanual rectal examination the uterus was found to be enlarged. Nothing can be said of the tubes, because normal tubes cannot be palpated. We believe that an exact picture of the action of folliculin on the uterus and tubes can be obtained if we inject lipiodol into the uterus before the injections of folliculin are begun, and take an x-ray picture. By comparing this picture to one taken after the folliculin treatment is over, we can clearly see any changes that occur.

John C. Hirst points out that frigidity disappears on the use of follicular hormone. Besides, in twelve cases of sterility, after injection of follicular hormone, five became pregnant. In five cases of disturbed menstruation, three reported good results.

Zondek in his studies, found that folliculin causes enlargement of the uterus and vagina. Besides, Zondek shows that ovarian hormone and folliculin are two independent units. In using x-ray (in ten times stronger doses required for castration) Zondek found that in the diminution of the folliculin, the change of the vagina occurs just the same, and that only the use of thallium excludes the hormone.

We suggest that more attention be paid to the practical uses of folliculin since it is deserving of attention. Only a continued use of folliculin will enable us to judge of its advantages and disadvantages.

CONCLUSIONS

1. Folliculin is a powerful remedy in cases of hypofunction of the ovary.
2. At present the action of folliculin obtained from animals is more satisfactory than that obtained from human sources.
3. Sistomensin is powerful hemostatic in uterine hemorrhage of endocrine origin.
4. Whole ovarian gland is less satisfactory in relieving dysmenorrhea than the use of pluriglandular therapy.
5. After a course of folliculin, it is advisable to continue treatment by agomensin (lipamin) alone, used hypodermically.
6. In the treatment of amenorrhea of ovarian origin, folliculin treatment is more powerful than pluriglandular therapy. Pluriglandular therapy is more satisfactory than agomensin (lipamin) alone.

In conclusion I would like to repeat the words of Eidelsberg, that persistency and patience are required for the treatment of endocrine disturbances.

It gives me great pleasure to thank Dr. Hibbert and Dr. Cotts for their helpful assistance.

No. 25 East Washington Street.

CASE REPORTS

Only sixteen of the more interesting cases are included in this report.

Case 1. Miss D. B., aged eighteen years, virgin. Complains of cramp-like pains first two days of men-

struation. Menses began at fifteen, every four weeks, of three to four days' duration. Patient normally developed. Labia minora enlarged.

Rectal examination shows uterus somewhat hard, slightly retroflexed.

Mixed glands given. Dysmenorrhea first month markedly relieved. Second month mixed glands started six days before menstruation. Menstruated without pain. Third month, mixed glands given two days before menstruation. Menstruated without pain.

Rectal examination shows uterus somewhat larger and softer.

Case 2. Mrs. K. B., aged twenty-three years, married four years, no pregnancies. Complains of dysmenorrhea. First menses began at the age of sixteen years, regular, four days' duration. Severe pain the first day. Patient is a small woman, of healthy appearance.

Bimanual examination: Retroflexed uterus of normal size, movable. Cervix conical, external os pin-pointed. Patient refused instrumental dilatation. Mixed glands given ten days before menstruation, and continually until menstruation started. The same treatment was repeated for the next two months. Patient had no dysmenorrhea for three months. Six weeks later patient complained that she had not menstruated. Bimanual examination showed a six weeks' pregnancy. Two weeks later had severe hyperemesis gravidarum. She was treated with corpus luteum and alcohol glucose rectal feedings. Hyperemesis continued for ten days. After two weeks hyperemesis became more severe, with twenty to twenty-five vomiting attacks a day. Insulin was then given hypodermically twice a day for two days. Patient recovered.

At seventh month sugar was present in urine dextrose), 0.55 per cent. Blood sugar normal, 105. Pankreatin-trypsogen given. Sixteen weeks before delivery was put on Prochownik's diet.

Pelvic measurements were, spine 25, crest 24, trochanter 29, Baudelocque 17, conjugata vera 8.5, circumference 33 inches. Blood pressure varied from systolic 105, diastolic 70, to systolic 115 and diastolic 75.

Patient was delivered at term; position LOA. Water bag ruptured when cervix was opened one finger. Patient was in labor thirty-eight hours. No cesarean was performed. Episiotomy and low forceps applied (indication, exhaustion of patient). Baby was a girl, weighing five and one-half pounds, in good condition.

Case 3. Mrs. C. F., 28 years old; complains of dysmenorrhea for first two days. Menstruation irregular. seven days' duration. First menstruation at fourteen. She has had two abortions in 1920 and 1922, both at two months.

Bimanual examination showed no pathology. Patient received plurigandular treatment beginning May 16. Last menstruation May 26, 1928, three days' duration, and painless. Examination on August 25 showed a two months' pregnancy.

Case 4. P. L., 17 years old, virgin, complained of dysmenorrhea and menorrhagia, and weakness. For three years she has suffered from somnambulism once every week. First menstruation occurred at fifteen, seven to eight days' duration, five pads a day, dysmenorrhea occurring on first to third day of period. At present has had amenorrhea for three months.

Patient very thin, pale, with many palpable lymphatic glands in different parts of the body. She was very irritable and impudent. Rectal examination showed very small, retroverted uterus, somewhat hard, with limited movability; adnexa not palpable.

Patient received pluriglandular treatment plus luminaladalin. Menstruation started after four months, four pads a day and painless. The next month there was no menstruation, but the following month it returned and from then on was regular, three to four days in duration, with complete disappearance of the dysmenorrhea. As soon as the glandular therapy was started the somnabulism disappeared. The impudent manner of the patient disappeared and she became shy and more modest. The uterus increased in size and became normal in consistency. She gained fourteen pounds. It is now nine months since the beginning of treatment. Letters from the patient indicate that she is in a very joyful frame of mind and she reports complete recovery.

Case 5. Mrs. N. M., 48 years old; four children, the youngest ten years old. First menstruation at fourteen years, seven days' duration, five to six pads a day; menstruation once every three months. When twenty-two years old patient began to bleed from the rectum every month for eight to ten days. Menstruation would follow after the bleeding from the rectum once every three months, six days' duration, five pads daily. When thirty-five years old, she menstruated every month, six days' duration, eight pads a day; first day in bed because of excessive hemorrhage. Menstruation again followed bleeding from rectum. The rectal bleeding was the same amount and regularity.

On bimanual examination no pathology was found. Patient was a diabetic and besides sugar in the urine has a general pruritus.

Patient was put on pluriglandular treatment with trypsogen. The following month the bleeding from the rectum lasted only two days. Menstruation missed for two weeks, but at time of menstruation she had epistaxis of one day's duration. The pluriglandular treatment was continued. The next month, April, menstruation was regular and she had no bleeding from the rectum. May and June periods were the same, with no bleeding from the rectum. This was the first time in twenty-six years that menstruation was normal. Patient was feeling very well.

Case 6. Mrs. Z. A., 26 years old, married five years, complained of amenorrhea, dysmenorrhea, and sterility. Has had goiter for about one year. Menstruation occurs once in every two or three months. Last menstruation six months ago.

The patient was corpulent and position of uterus could not be determined bimanually. By sound it was found that uterus was anteflexed, 6 cm. long, and both internal and external os were contracted.

Bilateral discission of cervix made and cervix dilated. She was given pituitrin, one ampule daily for eight days. Menstruation began same months and lasted two days. Patient then left the city and nothing more was heard from her.

Case 7. G. D., 26 years old, married, two children, four years and seventeen months old respectively. She complains of scanty menstruation since the age of eighteen. First menstruation at fourteen, regular, four days' duration, four pads a day. Since eighteen years of age, she has menstruated every twenty-eight days but only two days' duration and one pad a day.

No pathology found on bimanual examination. Agomensin, forty tablets, one three times a day, were given. The following menstruation was four days' duration, four pads a day.

Case 8. Miss G. C., 24 years old, married four years, complained of amenorrhea for six months. First menstruation at fourteen, regular, five days' duration, four pads a day. Three years ago had a miscarriage at four months. Last four months has had headache in occipital region.

Patient is corpulent, with greatly enlarged thyroid gland. Uterus is retroverted; adnexa descended.

On April 17, pituitrin extract subcutaneously, one ampule a day, was started and given for two days. On April 19, agomensin, thirty tablets, three times a day. No menstruation followed this treatment. On May 19 she was given daily injection subcutaneously of pituitrin for ten days, and at the same time thyroid-ovarian gland, thirty tablets, three times a day. Patient stated that she felt much better, but still had no menstruation, and headache was present. June 4 and 6, pituitrin injections were given, followed by hormotone, thirty tablets three times a day. June 29 started to menstruate profusely, continuing until July 6, so that ergotin was given to check bleeding. Headache completely disappeared. General feeling perfect. This case probably was case of pituitary thyroidism (Engelbach).

Case 9. Case of hypopituitarism of Dr. F. Jones. C. J., 40 years old, complains of failing eyesight for three years; amenorrhea for eight years; headache for three years. Three weeks ago had very severe headache and blood came from the left ear. Patient has repeated attacks of increased thirst, increased quantity and frequency of urination. Six months ago she noticed numbness of the tongue and the following day tongue and face were drawn to the right side. First menstruation began at nineteen; nine days' duration.

Bimanual examination not made; hymen practically intact. Basal metabolism rate was —5; Wassermann test negative. Urine pale yellow, specific gravity 1013, acid reaction, abundant residual; pus cells, bacilli, cocci, epithelial cells.

Eye examination showed optic atrophy; bitemporal hemianopsia. X-ray findings: Erosion of floor of the sella; heavy density extending upward from the anterior part of the middle cranial fossa. Roentgenologist thinks there is also calcification within the skull. Unfortunately patient did not return and refused hospitalization for further examination.

Case 10. A. A., 24 years old, virgin. Patient complained of scanty menstruation and nervous irritability one week before flow. First menses at thirteen, three days' duration, one pad a day, always regular.

Rectal examination shows hypoplastic uterus, adnexa not palpable. March 11, 12, 13, 1928, follicular ovarian hormone (animal) injections were given subcutaneously, forty units each time. March 20, menstruation began, lasted five days, four pads a day. Breasts became larger, nipples protruded more. Next menstruation April 16, lasted five days, four or five pads a day; excellent feeling. Patient states that for first time she desires to be in male society.

Case 11. G. R., 23 years old, married three years. Four years ago had an abortion at two months; sterile for last three years.

Patient is a well-developed woman, easily excited. Breasts fatty with hyperplasia of parenchyma. Bimanual examination shows uterus anteflexed, small; adnexa not palpable. First menstruation at sixteen, scanty, one day's duration. At present menstruation at four week intervals, but always one and one-half days' duration, and hardly stains one pad. Last menstruation August 20. Husband's seminal fluid examination showed that only one-third of the normal number of spermatozoa were present. Of these, only one per cent. were motile and motility of those present was only very sluggish. The seminal fluid was examined one-half hour after intercourse.

Follicular ovarian hormone, 40 units daily, was given for ten days by hypodermic injection (September 10 to 20). On September 22, menstruation began and flow was for four full days, two pads a day. She feels much better, nerves are more quiet, and disposition happy.

Case 12. D. H., 18 years old, unmarried, complains of irregular and scanty menstruation. First menstruation at fifteen, always painful.

Examination showed labia minora large and flabby; uterus small, freely moveable, and adnexa not palpable. Patient had not menstruated for one month. October 22, agomensin given hypodermically. October 29, follicular ovarian hormone (human) 25 units given and repeated on November 2. Menstruation started October 31 and continued until November 5; four or five pads well stained. December 3 to 8, menstruation, five pads a day. January, three days' menstruation, five pads. Increased sexual response.

Case 13. Mrs. V. K., 32 years old, two children, last child four years old. Has eczema madidans on both arms. Amenorrhea for two years. Previous menstruation always regular.

On bimanual examination no pathology found. Patient also complains of absence of sexual instinct.

Follicular ovarian hormone, 180 units (20 units each day) given. Immediately after last injection patient menstruated three days. For first time patient noticed sexual desire and feeling.

Case 14. S. L. M., 20 years old, married two years.

Amenorrhea four years' duration. First and only menstruation at sixteen, seven days' duration.

Patient was of medium height, not corpulent; breasts virgin in type; male type of hair growth on lower abdomen. Clitoris and labia minora large. No signs of any genital infection. Cervix small, conical; external os pinpointed. Uterus anteflexed, freely movable; measurement by sound, 6 cm. in length. Ovaries symmetrically large, tense, size of walnut, painless. Patency test showed the tubes to be open. Patient states that she masturbated for four years.

Thyroid-ovarian extract given, thirty tablets three times a day. On May 3 had had a show of a few drops for five days. May 5, follicular ovarian hormone (human), daily one ampule, until May 12. May 16, 17, 18, follicular ovarian hormone (animal). May 19, thyro-ovarian tablets for ten days, three times a day. No results followed. May 25, a daily injection of agomensin and agomensin per mouth for ten days. No menstruation. Uterus dilated. Diphtheria antitoxin injected into uterus. No result. June 16, follicular ovarian hormone (animal) for fourteen days, 40 units each day. X-ray after lipiodol injection by Dr. P. C. Fox showed infantile type of uterus, tubes tortuous and long. Has had no menstruation, but first time patient states that intercourse was satisfactory. Usually patient had sexual desire two or three times during a month. After follicular injection has sexual desire two or three times a week. Never before had sexual feeling.

This case probably was a woman of lymphatic type in which there can be a hypolastic type of uterus but disproportionally large ovaries with excess of connective tissue, and thickened tunica albuginea.

Case 15. Mrs. F. S., 23 years old, married four years, sterile. Besides sterility patient complains of absence of sexual response. Husband's seminal fluid was normal. First menstruation at fourteen, three days' duration, scanty.

Examination showed uterus small, anteflexed, movable, smooth surface, painless; adnexa not palpable.

Follicular ovarian hormone daily injection for six days, twenty-five units each time. Patient noticed very marked sexual desire and feeling. Patency test showed tubes open. Patient did not menstruate and at present is six months pregnant.

Case 16. O. K., 17 years old, virgin. First menstruation at fifteen. Since onset menstruated four times, half day each time, very scanty, always painful. On January 4, 1928, menstruation for three days, two pads, slightly stained.

Thyro-ovarian extract given. Last menstruation March 1, 1928, one day duration, one pad. Rectal examination shows uterus retroflexed, retroverted, of normal size; adnexa not enlarged. March 16, 17, 18, daily injection of follicular ovarian hormone (animal), forty units each time. March 19, menstruation began and continued until March 24; two pads well stained, a day. Felt good. Examination of uterus showed it to be larger and softer. April 17, menstruation three days duration. Until August patient was away from Chicago and on return reported that she had no menstruation for five months. She felt run down and tired. August 20 to September 1 daily injection of forty units of follicular ovarian hormone (animal) total 400 units. September 1 to 10, intermission. At that time agomensin per mouth was given, one tablet three times a day. Still no menstruation. September 10, daily injection of follicular ovarian extract (animal), forty units each time. September 18, menstruation began and lasted eight days, two to three pads a day. Follicular hormone given for two days, September 18 and 19, and for three days, September 20, 21, and 22, agamensin given by hypodermic. Result was very satisfactory.

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THE DIFFERENTIAL DIAGNOSIS OF THE PAIN OF ANGINA PECTORIS AND THE RADICULAR SYNDROME OF HYPERTROPHIC OSTEO-ARTHRITIS OF THE SPINE*

DON C. SUTTON, M. D.

EVANSTON, ILL.

Some years ago a patient was observed complaining of abdominal pain. He had had many diagnoses of conditions in the upper abdomen and finally had suffered an exploratory laparotomy. Since this proved negative, he was finally classed as a neurosis.

The development of pain in the sacral region resulted in his being put to bed with extension. This caused a cessation of abdominal pain. It was then realized that the abdominal pain was the result of his osteo-arthritis of the spine.

Since then many cases of similar nature have been observed and with especial interest that group in which the referred pain simulates the pain produced by angina pectoris. There had been very little written in English on this subject until Lewis Gunther and William J. Kerr presented the most complete analysis of the literature and the diverse symptoms under the title, "The Radicular Syndrome in Hypertrophic Osteo-Arthritis of the Spine," (Arch. Int. Med., 43, No. 2, Feb. 29, 212-248). These authors, besides a most complete bibliography, discuss in detail the antomy and pathology of the affected tissues.

Bailey and Casa Major (quoted by Gunther and Kerr) stress the thickening of the root meninges and the bony outgrowths both of which cause compression of the nerve roots.

Often patients suffering with osteo-arthritis of the spine suffer no pain in the back but only toward the peripheral distribution of the spinal nerves involved. Usually these pains are in-

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terpreted as being neuritis. The author once heard Dr. Hugh Patrick say that 98 per cent. of all the cases diagnosed as neuritis were really peripheral nerve pain from pressure on the roots by arthritic changes in the spine. Early examination of these patients may show some stiffness of the spine. During acute exacerbations, muscle spasm along the involved vertebrae may

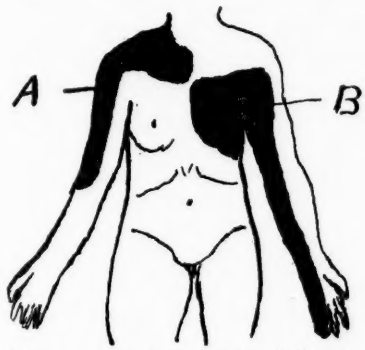

Fig. 1. (Taken from Gunther & Kerr.)

A. Pain distribution in involvement of the 4th cervical nerve root.
B. Pain distribution in involvement of the 1st, 2nd, 3rd, 4th and 5th dorsal nerve roots.

be evident. Marked bending or movement of the spine may produce pain either locally or referred. Pressure on the spine often reveals tender areas, as may pressure over the location of the posterior roots.

In more advanced cases there may be definite fixation or limitation of motion of portions of the spine, especially noticeable in the cervical and lumbar portions of the spine.

Gunther and Kerr have called attention to Déjerine's sign in radiculitis, namely, that sneezing, coughing and straining at stool either induce or increase the pain.

X-ray examination of the spine shows, as a rule, well-marked hypertrophic processes (spurs), especially on anterior and lateral aspects of the bodies of the vertebrae. In early cases the hypertrophic processes may show only as a fuzziness along the margins of the vertebrae.

Often in marked cases there is associated an area of atrophy of the bodies of the vertebrae. The spurs may coalesce with those of adjoining vertebrae to completely bridge over the intervertebral space and produce fixation of the joint. This fixation of the vertebral joints produces the so-called "ramrod spine" which is a curative process insofar as complete relief of pain is concerned.

Parker and Adson found that extensive bone changes may occur without x-ray evidence. In the thirty cases studied by Gunther and Kerr, twelve were found complaining of chest pain. The nerves usually involved in pain to the chest are the 4th cervical which involves the shoulder, the outer aspect of the arm and the first two intercostal spaces anteriorly. Involvement of the 1st, 2nd, 3rd, 4th, 5th and 6th dorsal nerves gives pain over the precordium and the inner aspect of the arm down to the tip of the little finger. When pain occurs in this region, the distribution is exactly that of angina pectoris.

Usually the attack of angina pectoris is induced by effort; at times by an over filled stomach and more rarely they occur during sleep. Pain is the prominent symptom and is usually described in the text-books as of an agonizing character, with the sensation of the chest being in the grip of a vise. The pain is felt over the precordium, especially the middle third of the sternum and referred to the left shoulder down the inner aspect of the left arm to the tip of the little finger. Accompanying the pain as described, is a sense of impending death. All patients suffering from angina

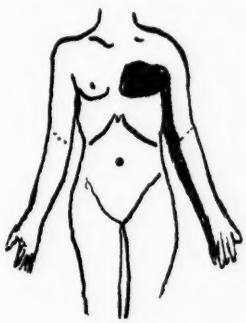

Fig. 2

The area of hyperesthesia following an attack of Angina Pectoris. (From MacKenzie.)

pectoris do not present such a picture. In many, the pain is not severe, the important element being the fact, first: that the pain is the result of effort; second: that the patient stops the effort with the appearance of the pain; third: the pain disappears after a few minutes of rest, seldom over fifteen minutes. There is also a great variation as to the location of the pain and the

points to which it is referred. In some the pain is felt over the precordium, in others only over the sternum, usually the upper portion of the middle third. The pain may be referred to any single point of the usual distribution, namely, only to the shoulder, elbow, arm or even only the little finger may be the point at which pain is felt.

Finally the pain of angina pectoris, whether that of effort, after a heavy meal, or nocturnal is always relieved by the administration of nitroglycerine or amyl nitrite.

The pain produced by osteo-arthritis is perhaps best illustrated by a short description of typical cases:

1. A male physician of 44 years of age gives the following essential history: At the age of thirty he had a severe attack of lumbago which disappeared following the removal of an infected tooth. A similar attack occurred at the age of 32. At 35, after running up a long flight of stairs he felt a sharp stabbing pain in the 4th and 5th left intercostal spaces in the mid-clavicular line. This pain being interpreted by him as an anginal attack, he consulted an older colleague who advised x-ray of the spine. An extensive osteo-arthritis of the dorsal and lumbar spines was found. Since then the lesion has been slowly progressive with periods of remission and exacerbation. Pain is often severe from involvement of other nerves during the periods of exacerbation. In this case, although the first pain was felt following excretion, careful observation has revealed the pain is more frequent and steady in character when at rest. The precordial pain is increased by the position assumed in driving a car. Although he may become conscious of the appearance of pain during effort, the pain is not noticeably increased by the continuance of effort, neither it is relieved by rest.

2. Mr. H., a tailor, 69 years old whose general history is negative. He has a blood pressure of 140 mm. Hg. systolic, 90 mm. Hg. diastolic. Urine is negative. Heart is of normal size with a two meter x-ray plate.

Outside of a moderate arteriosclerosis his general examination is negative.

Four years ago he suffered constantly while at work from severe precordial pain and pain in the left arm. Often with this pain he has a sensation of inability to breathe and of palpitation, these being obviously the results of fear. Although this pain was not relieved by nitrites, his physician told him he had angina pectoris. He stopped work and for four years has been expecting sudden death daily. When first seen he was taking digitalis, a theobromine compound and many amyl nitrite pearls daily, all without any relief of symptoms.

Careful questioning brought out the fact that his work was sitting all day and the pain is accompanied by pain between the shoulder blades. That it is constant in character and not relieved by rest. Furthermore, the same pain is felt on the right side but ignored because that pain is not "in his heart."

Also pain is felt in the lumbar spine and referred down the outer aspect of both legs, especially the right. It is further learned that these pains have been present to a less degree for 20 years. During examination of the spine a very unusual degree of tenderness is found over the 4th, 5th and 6th dorsal spines. X-ray showed a marked hypertrophic osteo-arthritis (see plate).

3. Mrs. S., a woman of 60, with nothing essential in the history other than rare attacks of gall stone colic was first seen four years ago because of precordial pain.

This pain was described as severe in character over the precordium, the sternum and radiating down the left arm. This distress always followed exertion.

Examination revealed an undernourished, frail woman, looking older than her age. There were many infected teeth. The heart was moderately enlarged. The peripheral vessels were tortuous and hard. The lungs were negative. Definite tenderness was elicited over the gall bladder. The spine showed marked rigidity in the cervical and lumbar regions but with no tenderness. Electrocardiograph showed slurring of the R. in all three (3) leads. Blood pressure was 210 mm. Hg. systolic, 115 mm. Hg. diastolic. Urine was negative. Although an evident hypertrophic osteo-arthritis was present, it was believed to be quiescent. The history with the marked sclerosis of the vessels appeared to justify the diagnosis of angina pectoris. The patient was accordingly given nitroglycerine tablets to take for attacks of pain and a theobromine compound to be used constantly. The teeth were extracted. The nitroglycerine was found to completely relieve the attacks and after some time with use of theobromine, her capacity for effort was greatly increased. Two years ago she began complaining of increasing discomfort from the gall bladder; at the same time the precordial pain became constant, aching in character. Nitroglycerine no longer relieved this pain. Similar pains were felt in the right side and in the neck. These pains were constant and interfered with sleep. During this period there were also frequent attacks that could be interpreted as anginal. With the acute infections in the gall bladder, she definitely lost ground and the anginal attacks came on with much less exertion. The pain was so constant and severe during these periods that often it could not be definitely decided whether the pain was of nerve origin or true anginal.

Six months ago she consented to the removal of the gall bladder because she was now having attacks of colic with chills and fever. Shortly after the removal of the gall bladder all the constant pains were relieved. Her cardiac condition is not nearly so good and her anginal attacks are now brought on by much less exertion than when first seen.

As is seen by the last case, the differentiation is not always easy and especially so when a true angina is known to exist. As noted by Gunther

and Kerr the patient notices particularly the pain that occurs on the left because he knows his heart is located in this region and promptly interprets all pain here as being of heart origin.

Because the patient becomes apprehensive from his belief that the pain originates in the heart these pains are often accompanied by other symptoms of a cardiovascular nature.

Palpitation and tachycardia are frequently noted by the patient when he becomes aware of the pain. One patient who suffered sharp stabbing pain near the apex of the heart always had a choking sensation and a fear of impending death.

If an introspective person has been told at some time that he has a heart murmur even though functional, it may be impossible to dissuade him from the idea that the pain is not of cardiac origin.

Angina pectoris in the presence of hypertrophic osteo-arthritis of the spine should be diagnosed when:

1. The attacks follow effort and are of short duration after rest.

2. The individual with an anginal attack regardless of its mildness has a fear of continuing effort and stops of his own accord.

3. Attacks following a heavy meal disappear after emptying the stomach. In this group the history of mild attacks from effort is obtainable.

4. The nocturnal attacks are of similar short duration and a history of pain following effort can be obtained.

5. Anginal attacks always disappear with the administration of nitrites to full physiological effect.

The referred pain of nerve root pressure in hypertrophic osteo-arthritis occurs frequently in individuals under forty years of age whereas angina usually occurs after fifty. The sex distribution is about the same, males predominating in my own experience.

1. The pain is increased by movements of the spine and are steady in character. Sharp stabbing or lancinating pains may be felt at the periphery of nerve distribution.

2. The steady pain or ache is often felt most after exercise and persists for long periods. This has been especially noticeable in business and professional men after a strenuous golf game. The pain is present the remainder of the day and also often the next.

3. Carefully elicited history reveals similar pain on the right side and usually over other spinal nerves.

4. Déjerine's sign is present especially after coughing or sneezing.

5. Pain is often felt between the shoulder blades, a distribution not encountered in angina pectoris.

6. X-ray shows evidence of hypertrophic changes in the bodies of the vertebrae.

7. The nerve pain of hypertrophic osteo-arthritis of the spine is never relieved by the administration of nitrites.

The significance of certain pains produced by hypertrophic osteo-arthritis of the dorsal spine is discussed in the relation of their similarity to the pain of angina pectoris.

The fact that these and pains produced by other regions of the spine may simulate other diseases of the chest and abdomen is beyond the scope of this article.

830 Ridge Terrace.

DISCUSSION

Dr. Robert James Gay, Chicago: Dr. Sutton's paper is singularly opportune, and, as he is in a position to observe more heart patients than any one of us, his clearcut presentation should be a beneficial lesson. How seldom do we physicians see the actual attack of angina pectoris! In the majority of cases the differential diagnosis hinges on the physical examination alone. The x-ray often fails us when we most need it, because angina-like pains may be present in upper dorsal osteoarthritis for months before the calcareous deposits are of sufficient density to show in the x-ray plate. In an acute exacerbation of osteo-arthritis there are areas of hyperesthesia corresponding to the spinal nerve-roots involved. These areas can be nicely brought out by very lightly stroking the skin with the ball of the index finger. This is a very important point of differentiation between the radicular syndrome of osteoarthritis and true angina pectoris. Very lately Levine has suggested and executed, as a diagnostic test in doubtful angina cases, the hypodermic injection of 1 c.c. epinephrin solution, such an injection bringing on a typical anginal attack in true angina pectoris cases only. Such a test is certainly pushing "close to the edge." One wonders whether Levine would like to have this test tried on himself if he were a "doubtful case."

Dr. Don Sutton, Chicago (closing): I should like to emphasize again that this diagnosis is relatively simple, and one that should not be overlooked. I want also to call attention to the fact that I have mentioned only one phase of referred pain. This referred pain may also simulate any of the painful conditions

in the chest and many of those occurring in the abdomen. Kerr and Gunther, in the *Archives of Internal Medicine*, cover the entire field of referred pain in hypertrophic osteoarthritis of the spine.

THE MANAGEMENT OF DEBILITATED SURGICAL PATIENTS*

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CHICAGO

Management of debilitated surgical cases is of equal interest to the surgeon, internist, specialist and general practitioner. Mortality and morbidity in surgical practice has decreased very markedly in the last ten years, notwithstanding the fact that the field of surgery is constantly broadening and a greater number of what we formerly considered bad surgical risks are now being operated on. This decrease in mortality and morbidity has not been so much the result of better surgical technic as it is a result of better pre-operative, operative and post-operative management, based largely upon our increased knowledge of the physiology, chemistry and function of the body. A large portion of this knowledge and improvement in surgical practice has come from the research worker and internist. Through the combined efforts of the research worker, internist and surgeon, there has been developed a definite program of management for surgical cases that were heretofore considered hazardous risks and still it is largely from this group that our present surgical mortality comes. The management of debilitated surgical cases is a plea for the individualization of surgical cases and a direct effort to classify our bad surgical risks and then to outline a management according to the handicap encountered in each case. We know that there are many definite surgical risks that have very definite medical complications and if we attack the surgical problem and leave unguarded or untreated the medical aspect, we are going to increase both surgical mortality and morbidity. It is well known that the surgical mortality rate in institutions having a well balanced staff working in full cooperation is lower than in those institutions where such conditions do not prevail. It might well be said, and Dr. Frank Leahy has made this statement, that the standard of the hospital can be determined by the number of consultations held, and that men with the greatest experience call their associates in consultation most frequently.

The debilitated or handicapped surgical patient requires group council. One might ask what constitutes a debilitated surgical case. That must, of course, in all instances be left to the surgeon and internist to determine. While it is true that the majority of these cases occur in the later periods of life, this is not necessarily the case. A child may have an acute appendicitis requiring surgical attention that may be complicated with an organic heart lesion bordering on or having decompensation, or diabetes may be present which necessarily adds to the debility of the child. Age alone, therefore, is not a qualifying factor. The specialist is not exempted from studying his patients for evidences of debility as was recently exemplified by a case admitted to the hospital for an emergency mastoid operation. The routine hospital examination revealed a very serious diabetic condition. The operation was postponed, the internist called and prompt diabetic treatment instituted to prepare that patient for operation as soon as possible. The patient was operated on the following day with an uneventful recovery and still remains under diabetic management. This probably illustrates the decrease in both surgical mortality and morbidity in the handling of debilitated cases.

Time does not allow a discussion of the management of the various conditions and complications making up our debilitated cases. The management of all cases might come under two general headings; first, those cases classed as emergency operations where the immediate concern is the saving of life and where little time in many instances can be given to pre-operative care; second, those cases having a surgical lesion requiring surgical intervention not only to relieve the patient of distressing symptoms, but to restore them to normal health.

In the first group long continued study is not permitted, but in spite of that many precautions may be taken at once in the management of those cases to render the patient a better risk.

In the second group there is little excuse for not exercising all known precautions in the management of those cases which are debilitated or handicapped.

The general management should come under six distinct headings in all debilitated cases.

*Read before Section on Surgery, Illinois State Medical Society meeting May 20, 1930.

First, a complete history of the case with physical examination reported. While much has been written along this line, there is still a tendency to either be lax or ignore the history of the patient and to depend too largely upon laboratory examinations.

Second, routine laboratory work such as urinalysis, red, white, differential and hemoglobin blood examination and Wassermann tests. Such additional laboratory work should be pursued as the individual case seems to warrant, including necessary x-ray examination where indicated.

Third, pre-operative management. Having arrived at a diagnosis and having determined that this patient constitutes a debilitated or handicapped surgical risk by anyone of the various conditions which may be present, then a very definite plan of pre-operative management should be pursued to render this patient a better and more normal surgical risk. If under such pre-operative management the patient does not improve to a point where we feel that they are a fair surgical risk, we are not justified in operating unless it is an absolute emergency case.

Fourth, the operation itself. Considerable thought and planning should be given to the operation in debilitated cases. In many instances, perhaps we have no choice in the type of operation as regards its influences on mortality. In many we can make a choice as in thyroidectomy or prostatectomy, whether we elect to do a one or two-stage operation. Also, in cases of pyloric obstruction due to healed ulcers we may elect different types of operation. Therefore, it would seem feasible that in debilitated cases the simplest operation should be the one of choice. Recently I heard one of our foremost surgeons make this remark regarding a death following subtotal thyroidectomy: "This should have been a two-stage operation." We have to have a death every so often to keep our judgment good.

Fifth, the anesthetic. There has been much in the literature of late years relative to various forms of anesthesia. In many instances, hospitals and surgeons follow one type of anesthesia. There can be no doubt that there are many debilitated cases in which there is and should be a choice of anesthesia. There are definite indications, we believe, in many instances, and that the newer form or rather improved methods in spinal anesthesia, rectal anesthesia, block anesthesia and drug anesthesia have a definite place in the management of debilitated and handicapped surgical cases.

Sixth, post-operative care. Both the pre-operative and post-operative management may be equally or more important than the operation itself. Hospitals are usually well supplied with pre-operative and post-operative routine orders. The usual instructions to the interne in many instances as regards both, is to give the routine care. This should not apply to the debilitated case. He should be individualized throughout and he can only be individualized by a systematic program outlined by the surgeon in collaboration with the internist on the case. While there are exceptions it may be accepted as a general rule that a good surgeon is not necessarily a good internist any more than a good internist is not a good surgeon. We speak much of the debilitated and handicapped surgical case needing the services of the best surgeon. It seems to me that he needs equally as well the services of a good internist, for good surgery is not just a matter of technique and knowledge of surgical pathology, however brilliant. It is a problem both of mortality and morbidity.

Among the more frequent conditions which the surgeon must be on his guard to detect which render a patient debilitated or handicapped are the following and perhaps somewhat in the frequency as outlined.

First, cardio-vascular lesions. These conditions may vary in degree from a mild myocardial change to the more severe changes of mitral, aortic and other valvular lesions and auricular fibrillation. In many instances there are myocardial changes present in which the physical examination reveals nothing and the electrocardiogram is negative and we are very apt to overlook these conditions except as they are gained by a careful history which in many cases will only denote a mild dyspnea on exertion. These cases are frequent in gall bladder disease in patients past middle life and not at all infrequent even in younger people in gall bladder disease. In fact, mortality following gall bladder surgery from cardiac failure has prompted us to use pre-operative measures in the form of digitalization of the heart almost as a routine in our gall bladder cases, especially in those past middle life. Leahy has repeatedly called our attention to cardiovascular lesions and their ability to withstand surgery if they have the proper

management. Long continued chronic infections from whatever source should always put us on our guard to make a careful search by all means at our command for evidences of cardiovascular lesions.

Second, secondary anemia. A hemoglobin of below 50 or a red blood count below 3,000,000 should be considered a danger signal as regards surgical procedure. This is true whether it be of acute or insidious onset. Except in emergencies where time does not permit, transfusion should be used preceding operation and if this is not possible, acacia and sodium chloride solutions may be used intravenously to take its place. This solution has been used at various clinics with excellent results.

Third, dehydration, from all sources, especially those associated with intestinal obstruction and frequently in other acute abdominal conditions; the restoration of fluids should always precede operation; the type of fluids used to be determined by the presence of an acidosis or an alkalosis. Dehydration and toxemia occurring in intestinal obstruction should always have immediate pre-operative treatment even though they constitute our most acute surgical lesions of the abdomen. Haden and Orr have repeatedly pointed out the necessity of determining the presence of acidosis or alkalosis in these cases by the determination of the CO_2 combining power of the blood and decrease in chlorides, and they have pointed out the necessity of the use of hypertonic salt solution in alkalosis and alkalies in acidosis. These observations with prompt pre-operative and post-operative treatment are necessary in such cases. At least 3000 c.c. of fluid should be given dehydrated patients every 24 hours. The methods may vary in various cases as may the solution used.

Fourth, emaciation. Emaciation of marked degree, especially occurring in obstructive lesions of the stomach, in acute thyroid conditions and diabetes, should have definite pre-operative management. It might be stated as a general rule that the loss of weight should definitely be stopped and an increase take place before surgical intervention is pursued.

Fifth, altered kidney function. Much has been contributed to this subject by the genito-urinary surgeons and the decrease in mortality following prostatectomy has been largely a result of restoring kidney function to normal before operative procedure takes place. In patients past middle life major surgical procedures should be preceded by a careful genito-urinary examination, and if kidney function is below a certain normal level, surgery should be postponed.

Sixth, diabetes. Insulin has given new life to diabetic surgery. However, many diabetics at the present time are undergoing surgery poorly prepared because the surgeon attempts to outline diabetic management.

Seventh, shock. Shock in the acute and traumatic lesions requires frequently pre-operative, operative and post-operative management. The causes of shock are not yet definitely known and undoubtedly there is much to be learned regarding its treatment. Patients in a stage of shock should not be operated on unless shock can be overcome. In bad surgical risks where the type of operation is such that a long period of time is necessary for its completion, treatment for shock should be instituted preceding and during the operation by the administration of water and glucose or other fluids.

Eighth, jaundice. The jaundiced patient constitutes a definite handicap and again pre-operative, operative and post-operative management come into play. The prevention of hemorrhage by blood transfusion, pre-operatively and post-operatively, is probably our best treatment. The choice of operation is extremely important in these cases and the simplest form of operation is the operation of choice, always, of course, dependent upon the pathology present.

Ninth, age. Age must always be reckoned with, as the death rate jumped from 2.5 per cent. for sixty years to 17.2 at eighty. The risk rises so rapidly after sixty years of age as to raise the question as to the advisability of only operating on those cases where the condition is producing severe types of symptoms or emergencies.

The following case histories may more definitely establish management of debilitated cases of various types.

Mrs. K., age 53 years, admitted to the Woodlawn Hospital, Feb. 19, 1929. Admittance diagnosis first, exophthalmic goiter; second, diabetes; third, auricular fibrillation with beginning cardiac decoompensation. History of acute onset of thyroid symptoms; basal metabolism plus 87, pulse 140, respiration 24, temperature 98.6. Loss of 40 pounds in three months; blood normal, Wassermann negative; blood sugar, Feb. 22, 195; blood sugar, March 7, 103; urine examination, Feb. 14, before admittance to the hospital, sugar posi-

tive, albumin, trace; acetone, trace; Feb. 24, sugar trace, acetone absent. Pre-operative management: Lugol's solutions 15 drops three times a day; powdered digitalis grains 3 three times a day. Internist in charge of diabetic management. Operation, March 8, local anesthesia, right lobectomy. Post-operative treatment; usual post-operative thyroid care with diabetic management. Recovery uneventful, discharged March 26, 1929. Present condition, gained 40 pounds, basal metabolic rate, plus 5; under diabetic management.

You will note in this case only one lobe was removed. It may be necessary to remove the other lobe at a later date. We felt this an indication for two-stage operation.

Mr. F., aged 63 years. Admitted to the Woodlawn Hospital, October 18, 1929. Admittance diagnosis: chronic cholecystitis and cholelithiasis, chronic myocarditis. Typical history of gall bladder colic, cholecystogram confirming the diagnosis. Blood normal, Wassermann negative. Genito-urinary specialist examined the patient because of some mild urinary symptoms; examination revealed normal kidney function; cardiologist called for cardiac examination and diagnosis of chronic myocarditis made. The above examinations were made previous to the patient's being admitted for operation on October 18. Pre-operative management lacto-dextrin, ounce 1 after meals; tincture of digitalis mm. 15, three times a day. Operated on Oct. 24, 1929, spinal anesthesia. Chronic cholecystitis, 150 gall stones in the gall bladder with adhesions between the gall bladder and first and second portions of the duodenum. Operation, cholecystectomy. 100 grams of glucose in 1000 c. c. of water given subcutaneously during operation. Post-operative treatment; digitalis ampules 1 every four hours for two days and then gradually decreased; glucose in water subcutaneously afternoon of the operation and repeated the next morning. Uneventful recovery; patient dismissed November 23, 1929.

Mr. T., aged 73 years, admitted November 12, 1929. Referred by Dr. Cousins. Admittance diagnosis: chronic cholecystitis and cholelithiasis, chronic myocarditis, complications, marked dehydration and emaciation. History: typical of gall bladder colic. Diagnosis confirmed by cholecysteogram. Physical examination was essentially negative, diagnosis of chronic myocarditis being made on the history and not the physical examination. Blood normal, Wassermann negative. Trace of albumin in the urine, blood chemistry normal. No jaundice present. Pre-operative treatment: lactodextrin, 1 ounce after meals; tincture of digitalis mm. 15 three times a day; 1000 c. c. of sterile water with 100 grams of glucose given subcutaneously preceding operation. Operation November 16, spinal anesthesia, cholecystectomy for cholecystitis and colelithiasis. Post-operative treatment; fluids by the mouth at once; digifolin ampules 1 every four hours; glucose and water subcutaneously 1000 c. c. with 100 grams of glucose every twelve hours for two days. This patient had a rather stormy period of convalescence, was somewhat delirious for about forty-eight hours and then went on to an uneventful recovery.

Mrs. R., aged 57 years. Admitted Woodlawn Hospital October 11, 1926. Referred by Dr. Barnsback. Admittance diagnosis: Incarcerated omental hernia (ventral). Vomiting 4 days preceding admittance. Ventral hernia for 35 years with history of several previous attacks of vomiting. Refused operation previously because of excessive obesity and difficult breathing. Weight 260 pounds. Having B. M. with enema and passing flatus, though markedly distended. Blood normal, except for slight leukocytosis. CO_2 combining power showed mild alkalosis. Vomiting continued 4 days after admittance.

Pre-operative management: Gastric lavage. Rectal feeding, 100 g. m. glucose in 1000 c. c. normal saline solution twice daily. Vomiting ceased fourth day, and general conditions improved. Tincture digitalis m. 20—T. I. D. three days preceding operation. Operation, October 21, 1929. Spinal anesthesia—omental hernia—repair of abdominal wall, 100 g. m. glucose in 1000 c. c. normal saline given during operation.

Post-operative treatment same as two previous cases. Uneventful recovery.

Mr. B. Aged 53 years. Admitted July 17, 1929. Referred by Dr. Doyle. Admittance diagnosis by Dr. Doyle 1, Exophthalmic goiter; 2, Locomotor ataxia; 3, Auricular fibrillation. History: This patient had been under treatment for locomotor ataxia for last six years. Records have been obtained from a sanitarium where he was a patient six years ago. About six months ago the patient noticed a change in his heart and complained of a rapid heart and palpitation associated with nervousness and exhaustion. These symptoms grew more serious and at the time Dr. Doyle saw this patient he had lost 56 pounds in six months and was unable to be up and about because of exhaustion; had profuse sweating; marked exhaustion; marked tachycardia; marked tremor associated with exophthalmos and auricular fibrillation; pulse 160; respiration 30; Argyll-Robertson pupil; absent knee jerk; no enlargement of the thyroid gland; blood Wassermann negative at this time. This patient was examined by another internist; by a genito-urinary specialist; by a neurologist and eye, ear, nose and throat specialist.

Pre-operative management: Lugols min. 20 P. C., Digitalis; ampule 1 to 3 times a day; Tryparsamide injection, fluids crowded, nourishing diet. He made some definite improvement under this regime. He was operated on August 5 under local anesthesia. Subtotal thyroidectomy.

Given 100 grams of glucose in 1000 c. c. of water subcutaneously during the operation; usual post-operative thyroid care; glucose and water given twice daily for two post-operative days with small doses of morphine at frequent intervals to prevent thyroid crisis. The patient was dismissed August 17, 1929. He weighed 80 pounds when he entered the hospital; at the present time weighs 150.

Mr. S. Aged 65 years. Admitted October 21, 1929.

Referred by Dr. Christie. Admittance diagnosis: 1, Pyloric obstruction—chronic myocarditis.

History: Constant vomiting soon after injection of food for the past month and constantly increasing in severity with a past history suggestive of ulcer for the past 15 years. X-ray examination showed pyloric obstruction with no evidence of malignancy; Wassermann negative; blood only slightly below normal. Urine examined on October 21 showed albumin and few hyalin casts; October 28 albumin trace and no casts; urinary output normal; N. P. N. normal.

Physical examination essentially negative with the exception of extreme loss of weight with flabby tissues and marked exhaustion. Pulse, temperature and respiration were normal.

Pre-operative treatment: 1, Rectal feedings; 2, Glucose, 100 grams with 1000 c. c. of water subcutaneously October 23; glucose, 100 grams in 1000 c. c. of water on the morning of October 24; 3, Digitalis by hypodigafoline every four hours two days preceding the operation; 4, Gastric lavage preceding the operation. Operated on October 24—spinal anesthesia. Gastrojejunostomy for healed obstructive ulcers at junction of duodenum and pylorus.

Post-operative treatment: Glucose, 100 grams with 1000 c. c. of water on immediately returning to the room; rectal feedings continued for 24 hours; digitalis continued and the usual post-operative treatment. Recovery uneventful and dismissed November 14.

THE COUNTY MEDICAL SOCIETY AND THE PRACTICING PHYSICIAN*

LEE O. FRECH, M. D.
DECATUR, ILL.

For a long time physicians have banded themselves together and have called such organizations Medical Societies.

In olden times such organizations were most essential, for those were the days when communication was quite impossible, when learning depended principally upon interpretation of events and upon one's own practical experience in the practice of medicine.

Information was then gained, chiefly, by contact with neighbors, was in a sense a hearsay process. Many of our very best oldtime physicians had never attended medical college but obtained their medical knowledge from a preceptor and from such few simple and antique medical books as were accessible.

Not being able to gain ready contact with those at a distance and sensing that such contact was valuable and almost necessary, medical organizations were founded which, at stated monthly or yearly intervals, provided the necessary opportunity for individual physicians to assemble and derive such benefits as men from other communities had to offer.

In those days the practice of medicine was considered an art, pure and simple. The one chief aim of those men was to heal the sick. A little later when medical men became better organized medicine changed from an art to a profession and has continued so, in the minds of most medical men, even up to the present time.

Medical societies were organized for the chief purpose of learning, of acquiring a better knowledge of medical practice; however, I acknowledge the fact that they were also for the purpose of promulgating a better and more friendly feeling between medical men. The State Medical Society, in a sense, might be considered the father of all our medical societies and at this time has as its units the local or county medical societies.

Medicine has changed. It has become a highly scientific profession having taken its place along with the other highly developed sciences. Our programs have changed from the practical of old to a conglomeration of scientific, technical and experimental. These facts I do not descry, for there is a place, a very necessary place, for such programs. However, it is my opinion that such programs should be confined to those organizations which deal with the specialties and, more or less, to the state and national organizations. Such programs may be good and well for the medical scientist, the technician and the experimental man of medicine, all of whom are specialists, but what of the medical man of practice, the bedside man, the man who contacts the family. Is he getting what he needs, what is the best for him or what is good for his patient?

The man of every-day practice seeks highly scientific data because he feels that he must keep up the profession, he wants experimental medicine because it is interesting to him, and he accepts technical medicine because it is forced upon him. It is probably true that he does not want every-day, simple, commonplace facts of practical medicine because he feels that he is well versed in this type of learning. But is he? Not all physicians, even today, have a comprehensive working knowledge of medicine.

It is my belief that most of us seek the big

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things of medicine, the new, the complex, the rare and that many men overlook the details, the small and the commonplace things of practice. These facts are due to our teaching, to our learning and to our highly scientific programs. The responsibility for these faults lies partially, at least, with the county medical society. The business of the local society is to teach us the practice and not the science of medicine.

Let us plead then with the county medical society to give us programs which are a little more rational and a little less hypothetical. If this is done we will lose none of the theoretical because it is all published in our medical journals from month to month.

The practice of medicine has changed from the old to the new; from the practical to the scientific from the simple to the complex; from the basic to the hypothetical; and it has changed from an art to a profession. Nor is this the extent of its changes. The greatest of all changes is, and has been for some time, taking place. Medicine is changing from a profession to a business, in part. Many causes are bringing about this change but the most important of them is our changing economic conditions. Most physicians in practice have recognized the importance, if not the necessity, of accepting the commercial as well as the professional viewpoint of practice, but as yet the commercial aspect has not received the attention nor has it been developed to the level of the scientific. Can anyone, today, deny the fact that the practice of medicine is partially a commercial or business proposition or that most men practice medicine as a means of livelihood? Still many medical men frown upon the idea when medicine is mentioned as a business.

The county medical society has accomplished much in attaining for medicine the scientific but in other ways it has been woefully lacking.

Medical societies were organized primarily to promote scientific attainments but in our ever-changing conditions of today they seem to have forgotten that changes in practice demand innovations which will benefit the physician generally and aid in the well-being of his family. The county medical society of today is not much different from that of yesterday, but its members are vastly different from those of the past.

Does the county medical society function along all lines as it should and does it give everything to the physician which he seeks? If economic conditions demand that the practice of medicine be a business as well as a profession then our local medical societies should teach their members something along the lines of business administration, for I am quite sure that most of us need such training.

Programs which deal with post-graduate courses should be a part of our routine in order that more intense interest may be created. Most all of us can well afford to spend a small part of our time in accepting such benefits as are obtained in this way. Reviews of the latest and best medical literature should be given at frequent intervals, for it is impossible for one to cover the ground with any thoroughness in his everyday reading. Some time could be given profitably, at times, to a discussion of the latest and best types of office furniture and furnishings also to practical office arrangements, and to necessary surgical and medical equipment.

Drugs, as well as the other numerous modes of treatment, would furnish a very interesting program, especially so if conducted by one well versed along lines of therapy.

Automotive equipment should come in for its share of discussion for the well known reason that automobiles constitute a large part of our overhead and are, in many cases, a big and unnecessary item of expense, all of which could be avoided by knowledge obtained through the other fellow's mistake.

How many of us can show a set of books and office records and not blush with shame? Good bookkeeping and reliable records are a valuable and necessary part of any business and I feel quite certain that most of us could profit greatly if the county society would only permit someone, who is capable, to appear on its program and inform us correctly. And, too, there is the important but time-worn subject of collections about which most physicians know very little. After all, what is the use of carrying on in practice if physicians cannot collect at least enough to live decently and to preserve them in their old age? Of all men physicians are more laughed at, and neglected most, because of their inefficiency in collecting accounts. There is absolutely no excuse for this condition. Please, county medical society, bring in an expert and teach us how others do it.

This is the day of the budget system and

budgets in medical practice will work just as efficiently as in other businesses or in the home. You, county medical society, can score here again and you can get for yourself a large attendance and an attentive hearing.

The subject of insurance, in all of its different forms, would furnish a splendid program as well as a profitable one.

Investments could well be gone over several times. I feel that physicians, as a whole, save so little money that they should stop buying oil stocks and playing the stock market and use more wisdom in their small but important investments. Why does our county society let us go on and foolishly waste our money in this way? Plenty of capable men can give us judicious advice on this subject.

Most physicians take vacations at least once each year, or should, and their experience would be profitable to the membership of local societies. There are so many places of beauty to be seen and so great a variance of cost in seeing them that the whole thing is rather perplexing unless first hand information can be obtained. Why cannot the local society contribute its share on vacations?

Contact of members in a social way is lacking in most medical societies. There certainly is no better method of cultivating friendships, confidence and good will among brother physicians. A smoker or a buffet luncheon with a variety program (non-medical) or a picnic certainly would accomplish much. If a picnic, give the wives and children a chance.

The county medical society is the official and public agent of each and all of its members. It fills a place in the community which cannot be filled by the individual; it has a certain prestige which is wanting with the individual; it has power which the individual lacks, and it commands respect which the individual cannot hope for. In the county medical society we have an agent which can perform a service and demand a favor that individually is impossible. There is no good nor logical reason why its influence should not be more keenly felt by certain lay groups who at the present time are endeavoring, and successfully so, to dominate certain types of medical practice and health education.

It is no common secret that lay dictation is usurping medical rights and functions and if so continued bids fair to crush medical authority in health matters. In these matters the county medical society should take cognizance of this fact, stand on its feet, and fight. Lay dictation has been gaining in public favor for some time; lay health authorities have been making their influence felt for many months; lay groups have been instigating and carrying out health programs; lay groups are dominating the school health work, the pre-school clinic, crippled children's clinics; lay groups are offering their health advice through the public press; lay groups are sponsoring child welfare and nutrition clinics; lay groups are dictating to, if not controlling, industrial surgery; lay groups are advocating health insurance, maternity bills, anti-vivisection and contraception; lay groups are practicing medicine under the protection of large universities; and lay groups have even advocated state medicine.

What has the county medical society done about it? Nothing. It has left everything to someone higher up, but, it is my opinion that, if lay dictation is stopped it will be through the efforts of the county society and then only after a long, hard struggle.

It is high time that policies be formulated, that matters be discussed and that the power of health control be delivered back into the hands most capable of handling such matters—the county medical society. Matters of such importance should be presented and discussed before the local county society, openly and without fear, and it should be done before medical prestige is entirely gone.

Things other than scientific programs are needed and if we, the county society, do not soon wake up there will be no further need for scientific programs nor necessity for scientific medicine.

Why, you ask, have these things taken place? The answer is simple. It is because of inertia and lack of interest in such matters by members and the county medical society. There are so many matters of high importance that confront us that you secretaries should have no difficulty in keeping your members interested.

The program herein outlined can hardly be carried on with the excessively low rate of dues now paid, but why should not medical men be willing to pay dues commensurate with the benefits derived. Medicine is our life work, our very existence, and why should we not pay a suitable

tax to carry on? We pay well for other privileges, ofttimes way out of proportion to value received. It is my belief that our members will pay, and pay well and willingly, if results justify it.

A medical society, to carry on a broad program, necessarily needs a good secretary. Quite a few societies make the mistake of changing their secretary every year or so. Every society needs an experienced secretary, one who is aggressive and alert, one who can and does interpret the needs of his society, and one who will serve as long as he can be useful to his organization. The delegate and alternate to the state society should also be men of high type and intellect and should be returned over a period of time. In this way only can the local society get the best and truest type of representation and in this way only can the local society give its best and most intelligent type of co-operation to the state society.

To summarize:

1. The scientific program should be made as practical and matter of fact as possible.

2. We must recognize the fact that medicine is a business as well as a profession, and in so doing, strive to improve the economic phase until it is on a par with the scientific.

3. Programs dealing with the business end of medicine and the profession should be awarded part of the medical societies' time and should touch on the economic as well as the scientific.

4. The social and recreational part of the physician's life should be dealt with by the society.

5. The county medical society should outline and carry out policies for the control of public health work.

6. If the county medical society of tomorrow functions as it should it is going to reach out and aid its members not only from the standpoint of professional wisdom but it is going to play an important part in all their activities, it is going to touch their business from all the important angles.

7. County medical society dues should be sufficient to justify a broad program and insure a variable activity, both of which are so necessary and vital to the future existence of medicine.

Standard Life Building.

DISCUSSION

Dr. Elizabeth R. Miner, Macomb: The first thing I want to ask is, who is to instruct the medical societies how to do all these things? It would be a wonderful work if they could give us advice on collections, on business, on other things in which we are babes in the woods. Investments, for instance—many of us would have been happy this last year to know something accurate about investments. Whom shall we ask? One banker tells us he cannot give us advice on investments —another banker advises us to invest in his enterprises which may or may not be a good investment. How are we to educate our school teachers? Some of ours have life jobs. They are wedded to the osteopath. It is a form of practice that does some good, perhaps, but what are we going to do about it? How about public health work? We are anxious to do all we can to promote it, but if we turn it over to the public health man what shall we do? That is a question for the young man to face more than the older physician. Then there is this question of advertising. I saw a nice line of advertising for a county society. I was in a strange community last winter and noticed that every two weeks there appeared in the newspaper a list of the names of all the members of the county society, headed "Ethical Physicians and Members of the County Medical Society." That appealed to me as being a dignified and satisfactory form of advertising.

Dr. Lee O. Frech, Decatur (closing): Dr. Miner asked us who would instruct physicians on certain points when needed. The answer is, someone who has authority and capability along these lines. Or, to put it in another way, we will call in a man who knows these things. We have men in our lines and in every line who know them—collections—men who are collecting as high as 98 per cent. of their accounts; they could tell us. If necessary we can call on men outside the profession to tell us, just as we are called to teach the laity on medical subjects. You will have to get somebody to advise you on investments who knows financial matters. You do not see many bankers or building and loan officers get caught in the stock market. Most of us know very little about investments, and it would take a very capable man to tell us about this particular subject. I feel that public health should be worked out in co-operation with the state department of public health, and I think they would be only too glad to co-operate if they could get the medical societies to show a genuine interest in the line of public health. The members usually wish to go at it in a haphazard manner. If they feel like reporting their cases they do so—if not, they do not; but that would have to be worked out as part of the work of the medical society. Each medical society and public health organization should control its own community, and if not capable of doing so there is something lacking in the medical society that should be instituted. It is working along the wrong lines.

I was afraid I might be misunderstood in my remarks about the business end of medicine. It is not my feel-

ing that it should be made the prominent part of medical work. The scientific end of practice is of course the outstanding factor of the profession. But I bring in the business end because it is so sadly neglected that I feel we could sacrifice some of our program, for progress in science, for progress along business lines. Dr. Mundt mentioned the difficulty of getting attendance. You must have that to put these things over. The point I tried to bring out was that you should give your members a program along lines which will interest the men you want to attract. We would catch most of them in one way or another. It seems to me that attendance is mostly a matter of habit; if a man gets the habit of coming he will probably be a good member, and once the habit is established you can depend on him. Medical economics is probably a distasteful subject to most men, but it has to be faced. It is playing a more and more prominent part in the activities of every physician's life. We will have to face it some time and might as well do it now. It may be a long time before physicians will realize it is important, but we should be working on the problem now. The same thing is true with yearly health examinations. This has been advocated for years, but so far we have not made much progress. It is still in its infancy, and cannot by any means be called a success as yet. My feeling is that the medical society must interest its members in that one factor more than almost anything else. We have held to scientific things all these years and I think we should continue to do so, but medicine should not hold strictly to science when so many other practical problems, that must and should be solved by the profession, are facing us.

TULAREMIA
REPORT OF CASE IN CHICAGO

H. G. Leon, M. D.

CHICAGO

History: The patient, Mrs. K. M., presented herself for examination on January 5, 1929, giving the following history. Age, 29 years; occupation, waitress; weight, 153 lbs. On November 10, 1928, the patient noted a swelling of the epitrochlear glands of the right elbow. The swelling was associated with a persistent, mild pain. On November 17 the patient first complained of a continuous aching pain in the distal phalanx of the ring finger of the right hand, pain and tenderness being more marked on the dorsal surface. Four days afterward there occurred severe chills; aching pains in the back and limbs, along with night sweats. The temperature was 105 degrees F. A small ulceration appeared red on the right ring finger, dorsal aspect of the distal phalanx. In three weeks it assumed the appearance of an indolent ulcer 10 mm in size with punched out and serrated edges. The ulcer increased to about 15 mm the 4th week and remained stationary for the following 6 weeks. Throughout this period the patient complained of intermittent attacks of chills, profuse sweatings and rise of temperature, distressing cough, more aggravating at night and often associated with pain in the scapular region radiating anteriorly to the epigastrium and to the sides in the region of the lower ribs. Nausea was present but no vomiting, anorexia, general weakness, mental dullness, inability to attend her duties as usual; loss of weight, 20 pounds. The swelling in the epitrochlear gland was opened on December 1, 1928, and a considerable amount of thick, greenish pus was obtained. The incision was allowed to close without drainage. Healing ulcer was first noted in the middle of the sixth week, with the appearance of a thin, grayish blue membrane. The attending physician was treating the patient for "Rheumoid."

On January 2, 1929, the patient was discharged as cured, but the doctor's attention was called to another swelling appearing in the medial aspect of the arm near the axilla. She was instructed to return in a few days, if the swelling had not disappeared by that time.

Examination: When I first saw the patient, January 5, 1929, she was still discharging from the incision and still complaining of pain in the right axilla. Her temperature was 99.2 degrees F; pulse, 72; systolic blood pressure, 126; diastolic, 70. There was a marked enlargement of the glands on the medial surface of the right arm about 2 inches below the axilla. The glands were slightly adherent to the muscular tissue, but there was no fluctuation or tenderness. Examination of the lungs and heart failed to reveal any evidence of pathology. The patient was very weak and unable to stand on her feet for any length of time. On the same day she was ordered to the Belmont Hospital and subjected to further examinations and laboratory tests.

Laboratory Examination: Urinalysis shows a turbed urine, with many pus cells and bladder epithelium, but no casts and no traces of albumen or sugar. Blood examination did not reveal any typical picture. The total leucocytic count was 12,400; polymorphonuclears, 71 per cent.,

large lymphocytes, 16 per cent., small lymphocytes, 12 per cent., transitional, 1 per cent., erythocytes, 5,500,000 per cm, hemoglobin, 80 per cent. Radiographic and fluoroscopic examination of the chest did not reveal any evidence of mediastinal envolvement. Blood Wassermann negative.

Later Course: The patient was strongly impressed with the resemblance of her ailment and Hodgkin's disease, her mother having died of such disease several years ago. Upon the history of the case, its clinical characteristics and following a rigid procedure for the exclusions of similar conditions, a tentative diagnosis of the tularemia was made and the disease reported as such to the Health Department of Chicago. After much questioning the patient admitted having partially cleaned a wild rabbit purchased in a butcher shop.

Treatment: On January 31, the axillary glands (right side) became enlarged, with a pin point redness and slight fluctuation. The swelling was incised, two ounces of thick tenacious, greenish pus removed, the wound cauterized with carbolic acid and drained. The epitrochlear incision was also carbolized and drained. Absolute rest in bed was ordered, potassium iodide administered (gr. 10 T.I.D.) and tonics. The wounds healed completely in two weeks and the patient has been well since then.

The diagnosis was confirmed by the report of Dr. G. W. McCoy, Director of Hygienic Laboratory at Washington, received January 31, 1929, and stating that the agglutination test with the patient's serum was positive for the B. Tularemia in dilution of 1:640.

3218 Lawrence Ave.

THE SYMPOSIUM OF MENTALITY*

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Do you know that the most realistic sentence of medical literature was uttered by the German pathologist Virchow, "Everything from a cell?" We know from this aggregation of the cells that the body is composed of two hundred bones, two hundred and thirty joints and two hundred and sixty pairs of muscles.

Do you know that the evolution of the nervous system—most vital—occurs during childhood, pubescence, and adolescence, and that the brain approximately attains its ultimate weight by the seventh year, the most rapid growth being between the first and fourth year?

It has been reliably stated that of the seven thousand infants born each year in the United States, about two hundred and seventy, or one in twenty-six, eventually become incapacitated by abnormalities of the mind.

Oliver Wendell Holmes stated: "Every man is an omnibus in which all his ancestors are seated." It is said that morons possess the instinct of an adult but the self-control of a child. In psychiatry there are two divisions or defects that can be transmitted from generation to generation. These are dementia precox and manic depressive psychosis, the other forms of mental symptoms in diseases are basically somatic.

Paresis, although characterized by a great variety of mental symptoms, is not a mental disease. The mental phase occurs in the course of a luetic infection.

Epilepsy can no longer be regarded as hereditary; it is a syndrome, not a disease. It is not a disruptive cortical discharge. It is well known that either tumor, syphilis, trauma, toxic states or cerebral arteriosclerosis may be the essential cause or factor.

In the feeble-minded we know that certain forms are probably germ plasm defects, but the proportion is small. We do know that environmental and prenatal influences, infections and trauma are the predetermining causes, the effects of which are probably not handed down.

Old age is the final epoch in the cycle of life and it is inevitable. You may honor and dignify it but you cannot escape it, "many are born old and some old are young." The mental faculties which each individual has to develop for himself are cognition, memory, judgment, reason, imagination and association.

Emotions and impulses are essentially the same thing as instincts, naturally therefore, they play a tremendous part in the study of sanity and insanity.

We distinguish between dementias, which occur from faulty development, the kinds called *primary,* and those which result in a formerly normal individual from disease or accident termed *secondary.*

Insanities are mental aberrations. The essential morbid element of a mental disease consists

in a lack of adaptation between the mental faculties and the instincts.

In fact, it is essential to the diagnosis of an insanity that the instinct and the mental faculties shall of themselves be intact and that only the normal relationship between the two shall be broken. Only when with a potentially adequate mentality and normal instinct, and when there is a discord in their interworking, can relational insanity be diagnosed.

These aberrations are called a psychosis when we have an exaggeration of some normal phase of mind. The genuine mental diseases in which there is a real twist—that is a kink between the mental faculties and the instincts—constitute the true insanities.

There should be a good physical inheritance, a healthy diathesis (bodily conditions predisposed to a particular disease); children born of insane, feeble-minded, tubercular, alcoholic, syphilitic, epileptic or neurasthenic parents are at a great disadvantage.

Mental disorders did not play an important part in ancient history owing to the fact that the law of "survival of the fittest" automatically eliminated the insane and defectives. They were stamped out of existence; the Romans threw their unfit from the Tarpeian rock.

Plato, one of the earliest to explain the etiology of mental diseases, said: "There are two kinds of madness—one arising from human diseases, and the other from an inspired deviation from established customs."

Hippocrates thought that bile was carried to the brain and that the brain became heated something like a hot-box.

The average general practitioner looks upon neurological conditions with an attitude of deference; he feels uneasy in their presence and distrusts his own diagnosis and judgment concerning them, and feels greatly relieved when he can unshoulder them upon one who makes a specialty of this class of ailments.

From observation we know that the percentage of patients under 15 years of age in institutions is very small, and that as adult life is reached the rate rapidly increases. During the period of middle life the increase becomes less marked and in the years of old age the increase is again accelerated.

Willis, Prochaska, and Holler were the first to suspect a relation between insanity and the pathological changes in the brain, but they never got anywhere with this belief.

Galen believed with other writers in the influence of the moon. But our noted Dr. Rush, of Rush Medical College, had doubts about the moon. He thought perhaps a certain condition of the air of light and darkness had some relation to mental disorders.

"Tupe and Arnold felt sure it was due to increased density of the cerebral substance, particularly those parts of the brain, by means of which the soul is connected with the body." And we believe, with Dr. Haven Emerson, that we can now see a time, not so very far away, after all, "when the strange child, the worried mother, the confused and depressed workman will appeal to hospitals for relief from the twisted personality, the beaten brain, the incapable self-control, as they now run to them for diabetes, appendicitis or typhoid fever."

Under the type of mental disorder comes a group technically known as the psychoneuroses, many of which are recognized under the guise of a "nervous breakdown," but whose owners refute any implication of a mental element in them. To the psychiatrist, however, nervousness is as much a mental disorder as insanity.

They are the individuals who with no discoverable physical disease, attempt to translate their mental or nervous difficulties into physical ailments.

Individuals, because of their mental make-up and their early parental influence and environment, which are the primary determining causes, habitually carry through life many of the dependent habits and customs of thinking of their childhood, and develop at a later period. The early warning symptoms of approaching mental disease, no matter what the variety, should be early recognized.

Those cases which show disorder of thought, as delusions and hallucinations beginning at the adolescent period and having a bad prognosis, are the most important of mental conditions. These conditions imply on the part of the public some knowledge of what these symptoms are.

Until the stigma, ignorance and superstition that surround the mentally sick is dispelled and until mental disorders are accepted as a disease and not a disgrace, these conditions cannot become effective or receive the proper help.

TREATMENT OF INJURIES OF THE EYE*

EDWARD F. GARRAGHAN, M. D., F. A. C. S.
CHICAGO

The preservation of the eyeball and the eyelids is a problem that often taxes the highest surgical skill of the ophthalmologist. Nature has wisely and cleverly protected the organ of sight by placing the eye in a bony cavity with a curtain of skin and cartilage to protect the anterior surface. Injuries of the eyelids may be of such a nature as to permanently mar the facial appearance of the individual or they may leave unprotected the delicate organ of sight. Precision and exactness in the surgical care of these cases is important.

In repair of the eyelids the surgeon must keep in mind the cosmetic effect, associated with perfect function. To attain this end he must strive to secure perfect coaptation of skin margins and as normal closure of the lids as is possible under the circumstances.

Burns of eyelids endanger the integrity of the eyeball by causing traumatic conjunctivitis with its damaging sequellae. Erosions of the cornea resulting in ulcer and adhesions of the palpebral conjunctiva to the bulbar surface may terminate in the condition known as symblepharon. To prevent if possible such serious consequences the eye should be protected as soon after the injury as possible by the use of oils or ointments to soothe the inflamed surfaces and prevent adhesions. Irrigations with boric acid or biborate of soda and careful observation of the cornea will be necessary to amply protect the eyeball.

Injuries to the eyeball range from a foreign body lightly imbedded in the cornea to deep lacerated or penetrating wounds with loss of vitreous to such a degree that enucleation is necessary. Removal of a foreign body from the cornea is not without danger.

The procedure should be carried out with every precaution against infection. Small particles lodged very lightly upon the corneal surface are easily removed by means of a cotton swab and the remaining wound, if any, heals rapidly.

The removal of small pieces of steel or emery requires strict adherence to the principles of asepsis. A sharp pointed spud is the ideal instrument to be used in these cases. Two or three drops of a 2 per cent. solution of Butyn or a 4 per cent. solution of cocain should be used. The eye should not be touched until it is sufficiently anesthetized.

The foreign body should be removed with as little damage to the surrounding epithelium as possible. A great aid to exactness is the use of a Beebe or Berger loop. Especially in steel cases is it important that every vestige of the offending material be removed. This refers in particular to the brown ring of dust or more properly iron oxide stain which often remains after the steel is removed. It sometimes happens that a small particle of iron rust remaining after the removal of a foreign body will set up a very violent reaction.

When the foreign body has been deeply imbedded it is often advisable after its removal to put the eye at rest by an ointment of atropine and bichloride of mercury and a protective bandage. After a few hours' rest a hot boric compress aids greatly in the healing process and in a brief space of time complete repair will take place.

Lacerated wounds of the cornea, the result of blows or thrown missiles and especially from the broken glass of windshields as a consequence of automobile accidents, have been on the increase in recent years.

In severe injuries of the cornea involving the iris and ciliary body and the crystalline lens, the question of enucleation must be considered. At present we are not so quick to recommend enucleation as formerly. One likes to be conservative, yet safe.

To enucleate is easy, but to save the eyeball even though the vision has been reduced to light perception should be the aim. Therein lies the real skill of the ophthalmologist. It was believed in the early days that a wound of the cornea involving the iris and ciliary body was considered almost fatal to the injured eye and was so likely to result in sympathetic ophthalmia, that the usual decision was to enucleate. But we know from experience that sympathetic ophthalmia is not as common a condition as was formerly believed and taught but on the contrary it is of rare occurrence. Magitot, writing upon

*Address before the North Shore Branch, Chicago Medical Society, Feb. 4, 1930.

this subject recently, says that in a yearly procession of 7,000 patients at the Lariboisiere Hospital in Paris, he has seen only three or four cases in six years which had the appearance of sympathetic ophthalmia. Enucleation is the surest prevention for sympathetic ophthalmia, as this permanently removes the primary source of infection, but there should be no delay and the operation should be performed as soon after the injury as is possible.

Spread of infection is prevented by the more recent methods of treatment in vogue.

At the Knapp Eye Memorial in New York, foreign protein in the form of milk or Aolan is injected almost immediately in every case of severe injury of the eye. The use of cyanide of mercury in the Illinois State Eye and Earl Infirmary, for the treatment of severe corneal and intra-ocular infections has proved eminently satisfactory in the hands of many surgeons.

Lacerated wounds of the anterior segment of the eyeball should have immediate attention. Nothing is of more value to procure restoration of function and repair of tissue than complete rest of the eyeball. The light protective bandage gives support to a weakened and injured eyeball and aids in preventing contamination of the conjunctival sac and the repaired tissues.

In a lacerated wound of the cornea when there is prolapse of the iris and no apparent infection, a conjunctival flap drawn snugly over the corneal wound, after the iris is properly cared for, forms the best protection and support for this type of injury. The technique of the operation varies somewhat according to the character of the injury and the extent of corneal tissue involved. In a very extensive injury the conjunctiva is separated from the sclera at the limbus as in the first step of an enucleation and after freeing the conjunctiva from the eyeball a purse string suture is carried completely around the conjunctiva at the limbus and by drawing the suture taut, the cornea is completely covered.

In a less extensive injury the conjunctiva close to the wound is separated from the sclera in a similar manner for about half the circumference of the limbus and is then drawn down over the wound in the form of a curtain. At each end of the flap are placed two sutures, which have their attachment below into the conjunctiva and when drawn taut cause the conjunctival flap to press firmly upon the wound. At the end of six or seven days the sutures are removed and the flap will gradually retract from the cornea except that the part immediately in contact with the wound will be firmly attached, thereby giving extra support to the wound area.

Injuries to the anterior segment of the eye, such as those involving the crystalline lens resulting in traumatic cataract are of great importance. Immediate result of such injury is loss of vision which increase gradually until blindness takes place.

These accidents are more frequent among children than adults. As a consequence usually we have to deal with a soft cataract. In some of these cases no interference on the part of the surgeon is required as they become absorbed after a certain length of time. Others, however, show no tendency to become absorbed and in the course of time require a needling of the lens or a linear extraction. In the adult the lens should be extracted in the usual manner. There is an added element of risk to the operation owing to the possibility of adhesions of the iris to the lens following the traumatism.

Perforating and penetrating wounds of the eyeball because of the injury to deeper and vital structures of the globe and because of the danger of infection should be treated with the strictest regard for asepsis. The prognosis in these cases should always be guarded. After the removal of any foreign material from within the eyeball there is always the possibility of tissue changes which may lead ultimately to complete loss of vision and destruction of the bulb. In no field of medicine is the x-ray of more value than in the diagnosis and localization of foreign bodies within the eyeball. Of all the foreign bodies that lodge within the eyeball none is more destructive or fraught with greater danger than steel.

Especially when there is a history of suspected foreign body in the eyeball a picture should be taken as soon as possible.

If the presence of a foreign body is thus confirmed, proceed with its localization according to the method of Sweet. This method gives not only the size of the foreign body in millimeters but the exact location within the eyeball.

As to whether the anterior or posterior route

should be taken for the removal of the foreign body from within the eyeball will be determiend by its location. That route and method should be utilized that will entail the least danger or damage to the integrity of the eyeball. Certain kinds of material such as ordinary glass give no shadow under the x-ray nor will they respond to the electric magnet. This type of foreign body should be removed, if at all accessible, and if it can be removed without jeopardizing too much the life of the eye. However, it sometimes happens that similar foreign bodies will pass through the interior of the eyeball and lodge in the scleral tissues and become encysted. Except for a slight impairment of vision the eyeball will occasionally tolerate these foreign bodies for many years.

I would stress the importance of careful and exact suturing of the lids following lacerated wounds and in the event that an operation for enclueation is required every means should be taken to prepare the way for a properly fitting prothesis. The importance of rest, the timely use of atropine and the advantage of the conjunctival flap to support the lacerated or incised wound of the eyeball should be kept well in mind.

Every eyeball with a suspicion of a foreign body within and where the history leaves an element of doubt should be subjected to a careful x-ray examination.

PREOPERATIVE MANAGEMENT OF THE PROSTATIC*

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In the not so far distant past prostatectomy has been considered by the general practitioner as nearly synonymous with a death certificate. This opinion was not without foundation, because until a few years ago the mortality ranged from 20 to 50 percent. During the past few years great changes have been made in the management of these cases, so that now mortality is greatly reduced, and morbidity, too. It is estimated that in the hands of a competent urologist, mortality now does not exceed 5 percent. With a skillful few it is even lower, as evidenced by reports in the literature of large series of cases without a death. This improvement extends to pre-operative, operative and post-operative management. Many advances have been made in the operative phase, such as the open suprapubic operation of Hunt; the perineal operation of Young, control of hemorrhage, and so forth, but by all odds the greatest advance has been in the pre-operative preparation.

Primarily, prostatic enlargement is a mechanical condition obstructing the urinary outflow and resulting in a varying amount of retention of urine. This fundamental conception has long been well understood. The thickening of the bladder wall as a result of hypertrophy of the musculature is only part of the picture. Far more important is the increase in intra-vesical pressure, which according to Harrell, varies from 30 to 55 cm. of water in the resting bladder. This pressure, of course, is greatly increased on straining at urination. Harrell reports the results of a series of interesting experiments from which I quote freely. The pressure within the renal pelvis is practically the same as in the bladder, regardless of whether it is the result of reflux up the ureter, or efforts of the ureter to empty itself against the increased tension in the bladder. A "filtration pressure"* of approximately 60 millimeters of Hg. at the kidney is necessary for kidney secretion; if it falls below this level secretion stops. Thus, if the blood pressure were to fall to 130, and the intrapelvic pressure rise to 80, the "kidney filtration pressure" would be only 50; not enough to carry on secretion. O'Conor has shown that with rapid emptying of a distended bladder a very marked drop in the blood pressure occurs, with a disastrous result to the patient. This acute crisis is probably due to an acute kidney congestion and also to an altered relation in the "kidney filtration pressure."

Retention of urine over a period of time invites infection of the bladder with resulting ascending pyelonephritis. This pyelonephritis is most often progressive, frequently irreparable and the source of many deaths. Hunt in a recent article states that 25 per cent. of the mor-

*Read before the Northwest Branch of the Chicago Medical Society, April 12, 1929.

**"Kidney filtration pressure is in our opinion a more apt term than "kidney pulse pressure."

tality at the Mayo clinic is the result of pyelonephritis.

Cardiovascular disease is a most important factor and intimately the result of long standing obstruction. Willius has shown that 42 percent. of patients with prostatic obstruction have cardiovascular disease, and that this ratio is higher than with other diseases occurring at the same age of life, and is not merely a coincidence.

Our pre-operative measures then must be directed chiefly at promoting elimination and bolstering up the cardiovascular system.

Promotion of elimination concerns itself chiefly with relieving the urinary bladder retention; a procedure frequently referred to as bladder decompression. This may be accomplished by either an indwelling catheter or a suprapubic cystostomy. Providing the catheter can be introduced and tolerated, the catheter method is preferred because it permits of a one stage removal of the gland, which is desirable because it allows better exposure, more accurate hemostasis and tends to minimize surgical accidents. Whichever method of emptying the bladder is used the keynote should be gradual decompression. Bugbee, O'Conor and others have pointed out the dangers of sudden emptying. Van Zwallenburg has devised an apparatus to accomplish this accurately. The apparatus is not always accessible, however, and we have found the use of a regular Murphy drip cannula to be satisfactory in its stead.

With the bladder draining freely, an attempt is now made to push the fluid intake and combat the urinary tract infection so as to restore renal efficiency to as near normal as possible. Elimination by means of the skin or gastro-intestinal tract is encouraged to the highest degree. We do not hesitate to use subcutaneous saline solution in the pre-operative preparation and in fact warmly recommend it.

Recently we have used insulin together with glucose solution in patients who were under weight and had little appetite with the idea of keeping the blood sugar at a somewhat lower level, perhaps hoping thereby to increase their desire for food. It is astonishing how it peps up these tired, worn-out old men.

These measures all lead toward stabilization of cardiovascular renal reserve. As to the heart itself, most authors recommend symptomatic support. We go a step farther and routinely digitalize our patients. This digitalization undoubtedly would not meet with the approval of some internists, but so far we have not met with untoward effects and we have the assurance of full cardiac support when the patient needs it.

The length of time required for proper preparation varies in different patients; but should be continued until repeated tests show a stabilized renal function. It may be safely said that the minimum time should be 10 days. As to the maximum, many cases require a number of weeks and in some instances months. Certain patients refractory to the building up procedure should not be prostatectomized. A suprapubic cystostomy and the application of a rubber bag, such as produced by Hare of Rochester, is the limit of their surgical endurance.

Hunt has recently shown by statistics from the Mayo clinic that every case required pre-operative preparation regardless of apparently excellent physical condition, and even in the absence of a large residuum or infection. It is generally believed that all cases become infected at operation, so it is better that they become infected by preparation, as is usually the case, thereby establishing a degree of immunity before reaching the surgical crisis. This state of infection is commonly referred to as "comfortably infected."

Preliminary bilateral resection of the vas, to prevent epididymitis, is now a routine procedure with us. This should be done as early as possible in the preparation of the case. Although we have seen epididymitis in spite of it, it has reduced the occurrence of this annoying complication considerably.

Cystoscopy before operation has been advocated by most, only in selected cases. This we believe, is a mistake. After many sad experiences with complications discovered too late, we have decided to examine every patient by means of the cystoscope. To our more conservative colleagues who decline routine cystoscopy, we recommend routine cystograms. Both these measures will detect vesical calculi, diverticula and tumors of the bladder. These lesions may be dealt with at the first stage of a two-stage operation, which has been shown to be the more favorable time from the standpoint of reducing mortality. Cystoscopy may also reveal the pres-

ence of carcinoma of the prostate, especially the small growths which sometimes escape detection by the examining finger in the rectum.

Conclusions:

1. Prostatic obstruction is not merely a mechanical process of obstruction of the vesical neck, but a condition which usually affects the entire organism, by way of the urinary tract.

2. Every prostatic should be considered a bad operative risk and subjected to proper preparation.

3. Preparatory bilateral vasotomy is recommended as routine procedure.

4. Routine cystograms and cystoscopy should be carried out whenever these procedures are technically possible.

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ARTHRITIS FROM A MEDICAL VIEWPOINT*

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Introduction. In this series, representing one hundred and thirty-four consecutive cases of arthritis, of all types, the classification of Goldthwait was used.

This classification possesses certain definite advantages, in that it is simple, is easily applied, and that it permits of a fairly accurate prognosis.

Classification. 1. Infectious arthritis.
(a) Acute.
(b) Subacute.
(c) Chronic.
2. Atrophic arthritis.
3. Hypertrophic arthritis.

The infectious type may appear at any age, (Schauffler[1]) and is usually met with following exposure to infectious diseases, or from the appearance of a focus of infection, or due to an acute exacerbation of a pre-existent focus. Subacute and chronic forms frequently follow and present different clinical pictures as the duration of the disease advances. The importance of focal infection in the latter is doubted by some. Infectious arthritis corresponds to the English rheumatoid arthritis, and is thought by Crowe[2] and some others to be due to staphylococcal infection; by Haden[3] and others to be due to streptococcus hemolyticus; and by others to be caused by various organisms. Theories and work regarding the causation of infectious arthritis have supported the allergic hypothesis, whereas, the role played by circulating toxins has also been emphasized. Factors such as heredity, body metabolism, and individual resistance, must be considered.

Atrophic arthritis appears most frequently in young, under-nourished, delicate and neurotic women. This is an extremely intractable form and is very resistant to treatment. It offers the poorest prognosis. The influence of infection prior to the onset of symptoms is known. The role played by foci during the course of the disease is doubtful, inasmuch as removal of foci not only is futile, but often actually makes the patient worse, due to the existing poor physical condition of the patient. The disease is progressive and leads to marked deformity. The so-called arthritis deformans is an example of atrophic arthritis.

Hypertrophic arthritis or osteoarthritis is a disease of senescence. It is found frequently in women following the menopause, and appears frequently in men at about the age of fifty, especially in those who are rather heavy, and who have done heavy manual labor. Ankylosis is rare here, but deformity is common because of postural changes and lipping of bone at the articular margins. The influence of body metabolism cannot be denied, although certain men, notably Crowe,[4] state that this form is due to a streptococcal infection.

General Data. One hundred and thirty-four cases were studied in this series, and divided as follows: *Atrophic* type, 9 cases; *hypertrophic* type, 45 cases; and *infectious* type, 80 cases;

*Work done in arthritis clinic, department of medicine, Northwestern University School of Medicine, during 1928-1929.
*Paper submitted July 1, 1929.

percentages of 6.7%, 33.7%, and 59.6%, respectively.

None of these cases was of tubercular or syphilitic origin, and all showed a negative Wassermann reaction. For data relative to sex, age, weight, type, and duration see table No. 1.

TABLE 1

		Infectious	Atrophic	Hypertrophic
Sex	Male	48 or 60%	1 or 11%	14 or 31%
	Female	32 or 40%	8 or 88.9%	31 or 69%
Age	Low	19 years	27 years	21 years
	High	73 years	55 years	76 years
	Average	39 years	46 years	54 years
Type	Acute	9 or 11.3%	None	None
	Subacute	8 or 10%	None	2 or 4.4%
	Chronic	63 or 78.7%	9 or 100%	43 or 95.6%
Weight	Low	91 lb	93 lb.	98 lb.
	High	262 lb.	187 lb.	245 lb.
	Average	144 lb.	140 lb.	158 lb.
Duration	Low	1 wk.	1 year	2 months
	High	30 years	15 years	20 years

In the infectious type the proportion of male to female was more than 1½ to 1, whereas, in the atrophic and hypertrophic types the opposite was true with proportions of 8 to 1, and more than 2 to 1, respectively. In regard to age, the high average (as would be expected) fell in the hypertrophic group with an age of 54 years; whereas, the atrophic group showed a higher average than generally reported, namely, 46 years. The average age in the infectious group was 39 years. In the infectious group the chronic cases predominated, with all stages present, however, and in the atrophic group all cases were chronic, and undoubtedly existed as such from the start. Chronic cases predominated in the hypertrophic group, although there were subacute cases, also.

The greatest average weight was found in the hypertrophic group, while the least average weight was found in the atrophic group. Greater disability, and the fact that the disease is chronic from the start, therefore, necessitating early and frequent medical care, may account for the fact that the upper limit of duration in the atrophic group was only 15 years as compared with 30 and 20 years in the infectious and hypertrophic groups, respectively.

Blood and Urine. Complete blood cell counts and urinalyses were made on all cases, with the exception of those coming but once, a condition which unfortunately occurs in a large outpatient clinic. In some cases a moderate anemia was found on entrance, but these cases showed a normal or near-normal count on discharge, although no definite attempt was made to treat this condition specifically. With few exceptions, the white cell count was normal. One outstanding exception being a case complicated with a chronic lymphatic leukemia in which the count reached 47,000, and the lymphocytosis 91%. A Spaniard giving a history of malaria presented the only leukopenia. The hemoglobin varied from 65% to 95%. The infectious group disclosed a tendency toward a fairly high polymorphonuclear leucocytosis. An eosinophilia was found in one case where no cause could be determined. Albumin, or albumin and casts was noted as follows: Infectious, 30% and 5%, respectively; atrophic, 33% and 0%, respectively, and hypertrophic, 11.5% and 2.2%, respectively.

Blood Chemistry. Blood chemistry determinations revealed the following information:

Total Non-Protein Nitrogen: Lowest values were found in the atrophic group, although the percentage in values above normal was 25%. Increases were also noted of 35.7% in the infectious group, and 39.6% in the hypertrophic group.

Urea Nitrogen: Here the smallest percentage of increases was found in the infectious type, with 26.9%, whereas, atrophic and hypertrophic groups reached 37% and 37.5%, respectively.

Uric Acid: The most outstanding results were obtained here, for in the hypertrophic, infectious and atrophic groups the percentages of increase were 79%, 88% and 100%, respectively. Some cases even approached the threshold of gout, but in no instances were tophi or mono and bi-urate crystals found.

Creatinine: Only one increase was noted, and this in a hypertrophic case. This test was therefore unimportant.

Sugar: In the infectious group, values ranged from 78 to 238, with only one case of lowered sugar tolerance; hypertrophic group from 78 to 165 with three cases of lowered sugar tolerance, and atrophic group from 70 to 143 with lowered sugar tolerance in one case. These findings differ from those of Pemberton[5], who noted a much larger incidence of lowered sugar tolerance.

Chlorides: This determination was not at-

tempted inasmuch as previous observations had disclosed a tendency to uniform normality.

Calcium: This finding was also omitted. It has been our constant observation that moderate increases occur in the hypertrophic, and moderate decreases in the atrophic types, whereas, the infectious type remained normal.

Basal metabolic readings revealed a large majority of normal rates, with occasionally a lowered one, usually presenting hypothyroid symptoms. These cases were given thyroid extract. Only one true case of hyperthyroidism was found, although there were infrequent increased rates that fell to normal on the second test. It is assumed that these patients were not truly basal during the first test.

The blood pressures, on the whole, fell within age normals, with the exception of occasional increases or decreases. Our minimal systolic reading was 100, and our maximal was 240.

Joints: Over 85% of the total cases were symptomatically polyarticular. There was hypertrophic arthritis of the spine, with and without symptoms. Atrophic types presented the typical fusiform swellings of fingers, with a tendency toward ulnar deviation, contractures, typical decalcification changes on x-ray, and with sharpening of the articular margin. Calcified bursitis occasionally accompanied hypertrophic arthritis, and x-rays were always positive here. The x-ray was chiefly negative in the acute stages of infectious arthritis, but in the chronic stages was often positive, especially in the knee where spurring of the patella and bifid spines was seen. Here limitation in motion varied from slight stiffness to complete ankylosis. It is of interest to compare the frequency of joint involvement. The four most frequently attacked joints (Table No. 2) were as follows:

Infectious: Knees, spine, hips and ankles, in that order.

Atrophic: Fingers, wrists, knees, and shoulders, in that order.

Hypertrophic: Knees, spine, hands, and hips, in that order. Thus it is seen that the knees, spine and hips played the most important roles here. Many of the joints showed some evidence of swelling. This was especially true in acute arthritis, or during an exacerbation of a chronic arthritis. Sacro-iliac arthritis was common in the hypertrophic group. One case had marked separation of the symphysis pubis, and was completely relieved by means of a sacro-iliac belt. Others showed evidence of structural deformity of the spine, and this form of low-back pain was treated orthopedically, with resultant improvement. Symptoms due to tilting of the pelvis, sacralization of the fifth lumbar vertebra, and abnormal angulation of this vertebra with the sacrum, simulate arthritis and must be differentiated from the latter.

TABLE 2

	Infectious	Atrophic	Hypertrophic
Knees	48.7%	55.5%	46.6%
Spine	47.5%	11.1%	41.8%
Hips	31.2%	44.4%	30.8%
Ankles	31.2%	22.2%	8.8%
Fingers	29.5%	66.6%	11.0%
Wrists	25.0%	66.2%	4.4%
Shoulders	36.2%	44.4%	13.2%
Elbows	18.9%	22.2%	13.2%
Feet	17.5%	44.4%	13.2%

Symptoms following the menopause occurred in 21% of the women in the hypertrophic group. The onset frequently followed the menopause and is indicative of the part played by metabolic imbalance.

Focal Infections: Search for focal infection disclosed some interesting facts (Table No. 3): More than one focus was noted in 61.2% of the cases, and in 4 cases no foci were found in the infectious group; multiple foci were found in 48.4%, and no foci found in 26.4% of the hypertrophic group; and in the atrophic group 66.6% were found with multiple foci, and 33.3% with single foci.

TABLE 3

	Infectious	Atrophic	Hypertrophic
Tonsils	77.5%	55.5%	30.8%
Teeth	46.2%	33.2%	37.4%
Pyorrhea	20.0%	11.1%	8.8%
Sinuses	5.0%	11.1%	4.4%
G. I. Tract	11.2%	0.0%	0.0%
Cervix	10.0%	0.0%	0.0%
Otitis Media	1.2%	0.0%	2.2%
Pharyngitis	8.7%	0.0%	4.4%
Rhinitis	1.2%	0.0%	4.4%
Appendix	6.2%	0.0%	0.0%
Constipation	12.5%	0.0%	11.0%
Tonsillar Tag	3.7%	0.0%	0.0%
Injected Jaw	1.2%	0.0%	0.0%
Gonorrhea	8.7%	0.0%	0.0%

Tonsils, teeth and pyorrhea were the chief offenders. Correction of these faults was made in all cases justifying such treatment. Approximately 15% of all cases had been tonsillectomized prior to clinic treatment. In many, teeth had been extracted and many had been treated

surgically elsewhere prior to entrance in the clinic. Cardiac disease was present in 16% and was of the chronic variety. A Neisserian-positive-history was obtained in 12.5%.

In one case where treatment had proven fruitless, investigation of the clinically negative gallbladder revealed stones. These were removed and the arthritic symptoms gradually disappeared. Foci were relentlessly sought for, and removed in both the infectious and atrophic types, but were not overly emphasized in the hypertrophic type where senility was common. Here foci were removed only where it was evident that a dangerous focus was present. Where age and condition did not contraindicate, however, vigorous measures were pursued. Routine eye, ear, nose, throat and dental examinations were made in all cases. Women were examined gynecologically, and men submitted to routine genitourinary examination. All pathology was corrected. Chronic constipation was treated, as it is our belief that focal infection may be important here.

TREATMENT

Medication: In acute cases with pain and swelling, salicylates and iodides were used. In the subacute and chronic cases we have used cinchophen, neocinchophen, and mono-iodo-cinchophen. The latter drug causes very little gastric distress, while retaining analgesic powers. Thyroid extract was given in small doses where evidence of hypothyroidism was noted. A few of our cases received digitalis because of signs of decompensation. Iodine, in colloidal suspension —of which there are several forms—was given in the gluteal muscles where analgesia was greatly desired. This form of medication has proved very effective.

Diet: In the atrophic cases, where most patients were thin and undernourished, a diet was given to increase the body weight; a reduction diet was, however, given to most cases of hypertrophic arthritis, because of increased weight. An attempt was made to correct chronic constipation by means of diet. Fruits and vegetables formed a large part of the nourishment. Colonic irrigation was not attempted. Low protein diets were given all cases of elevated blood chemistry, nephritis or hypertension, and treatment was directed at the cause in each of these instances.

Foreign Protein: The killed bacteria of typhosus with the alpha and beta types was used most frequently. No intravenous vaccine was used. Here, the patient being ambulatory, it was, of course, necessary to use rather small doses by the subcutaneous method. Beginning with 100,000,000 bacteria, we increased by that amount each week until a total of 1,000,000,000 was reached. A period of three weeks elapsed before protein was again used. The intravenous method as used by Cecil[6], Miller and Lusk[7] and others, has long been a favored way; however, authough small doses were given subcutaneously, the results were very gratifying. In some cases improvement did not occur until foreign protein was used. Reactions, if any, were slight.

Physiotherapy: Electric baking has proved of great value when dealing with arthritis of any extremity. The greatest results have been due to this form of physiotherapy. In dealing with arthritis of hip, pelvis, spine, or neck, radiant heat is used. This form of treatment is best for these regions. We attempted to give all of our patients ultra-violet light in fractional doses, after the work of Eidenow.[8] A greater tonic effect is obtained this way, and a definite bactericidal effect is exerted on the blood, when minimal erythema doses are used. Diathermy has proved disappointing, and in many cases has only served to increase the pain. Ionization and the static spark were used in selected cases, but without any marked beneficial effect. All arthritics should receive physiotherapy over a prolonged period of time. Such treatment should be under the direction of a physician especially skilled in this work. Too much must not be expected of physiotherapy, however, as other factors may influence the treatment and result. (Ewerhardt[9].)

Orthopedics: Low-back pain, symphyseal separation, structural deformities of the spine, relaxed arches, subluxations, contractures and limitation in motion are best treated by orthopedic management. Strappings, application of supports, belts, stretching, casts, exercise, et cetera, constitute the methods used. Consideration of orthopedic management must not be overlooked, as in many cases this treatment is necessary. As an example of this we cite the case of a young adult male with low, lumbar pain. The x-rays showed not only a sacro-iliac arthritis but a structural deficiency of the fifth lumbar vertebra,

resulting in a tilting of the pelvis. An operation was performed and a spine fusion done. This caused complete disappearance of all symptoms. Treatment directed at the sacro-iliac arthritis alone would have proved ineffective.

Sulpharsphenamine: Utilizing the knowledge that arsenicals have hematinic and general tonic powers, we used sulpharsphenamine. This was given in the buttocks in doses of .3 grams weekly for six to eight weeks. After an interval of three weeks the treatment was resumed. It was noted that pain and effusion lessened, appetite increased, and motion became freer. In cases of hypertrophic arthritis of the spine, with absolute fixation—so-called spondylitis—it was found that after one course of treatment most of these patients showed much improvement, and were able to move more freely. In a few instances, this latter improvement was very marked, even when the case was of years' duration.

O-Iodoxybenzoic-Acid: The ammonium salt of iodoxybenzoic acid was used in thirteen cases with the following results: In ten cases of chronic infectious arthritis, marked improvement resulted in 7; moderate improvement in 2; and no improvement in 1. In 3 cases of atrophic arthritis, none were improved. Further studies on the indications for the use of this drug is needed. Excellent results following its use have been reported by Young and Youmans[10], A. L. Smith[11], Millard Smith[12], and others, where an unfavorable report was given by Stein and Taube[13], the latter using no adjuvant treatment, however.

Our method was the intravenous injection of the salt, using a 100 c.c. syringe with a six-inch piece of tubing, and adapter. The injection is given with great ease for the operator, and we found it to be a better method than the gravity one. The initial dose was .5 Gm. of amiodoxylbenzoate in 50 c.c. sterile, normal sodium chloride. The dose was increased .1 Gm. and 10 c.c. solution each time until 1.0 Gm. in 100 c.c. solution was given. This comprised a series of 6 weekly injections. The median basilic vein was chosen and alternate arms used every other week. After an interval of 3 to 4 weeks the series was repeated. This form of treatment was given to selected cases only.

Cottrell[14] reported favorably on the use of calcium-ortho-iodoxybenzate. After careful and controlled use of this salt in a series of 20 patients (12 infectious, 3 atrophic, and 5 hypertrophic), we have discontinued its use. In almost all instances, despite precautions, severe nausea resulted, and in many instances, vomiting. Only one case showed any improvement; several were made worse; and the balance failed to show improvement. In all but one case we were forced to discontinue use of the drug because of the untoward symptoms that resulted from its use.

Results: In a total of 134 consecutive cases of arthritis, 50, or 37.3%, were markedly improved. This includes many cured cases. Almost all of these cases are now free of symptoms. Moderate improvement was obtained in 30, or 22.3%, and slight improvement was obtained in 11, or 8.1%. A group comprising 43, or 32.3%, were listed as "Did not return." Thus we have a total of 91, or 69.3%, improved, the majority markedly so. The "Did not Return" series included cases failing to return for appointments, those coming for only one or two visits, and a small number of cases improving but failing to continue treatment. The best results were obtained with infectious arthritis, and the least with atrophic arthritis.

Comment: Should we look upon arthritis as a confined entity such as an infection, or, should we consider it as a broad, scientific problem with many tangents and involving infection, metabolism, trauma, statics, heredity and many other unknown and puzzling factors!

The latter view seems most tenable and reasonable. Burbank,[15] on the other hand, considers it to be purely an infectious disease. There are many who consider it a manifestation of many bodily functions and dysfunctions. They do not believe arthritis to be strictly a matter of bacterial infection, although this influence is duly emphasized.

In the treatment of arthritis, Pemberton[16] emphasizes the use of all the tools of medicine. Brown[17] stresses the necessity of considering every case with an open mind. O'Reilly[18] believes that it is a medical problem primarily. In accord with these and many others, we believe that a sane rationale and conservative management is best. It is necessary to utilize our knowledge of medicine, physiotherapy, laboratory, orthopedics, oto-laryngology, gynecology,

genito-urinary surgery, and bacteriology. Rudböck[19] favors the absolute use of autogenous vaccines. Leriche and Brenckmann[21] are doing some interesting work on the aseptic necrosis theory in the production of arthritis.

We should be impressed with the fact that infectious arthritis offers an excellent hope if treated early in its course; that, we can help those afflicted with intractable, atrophic arthritis, and with the needlessness of submitting aged and feeble sufferers to surgery. That indications exist for surgery in the treatment of arthritis is not denied. Above all, it is necessary to convince all patients that persistence is absolutely necessary, as frequently good results do not begin to occur until a long time after starting the initial treatment.

122 South Michigan Avenue.

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122 So. Michigan Ave.

ACUTE ABDOMINAL PAIN

FREDERICK G. DYAS, M. D.
CHICAGO.

The interpretation of abdominal pain is an almost daily problem of any medical man. It is therefore a subject of great interest to us all. The correct evaluation of any sign or symptom should be in terms of the underlying pathology, either physcologic or histologic. The first school of diagnosis was empyric, Hippocrates; the second was that of Virchow, cellular; the third a combination of cellular and bacteriologic, Metchnikoff or Lister. The present era combines all the above interpreted in the light of a disturbed physiology.

Modern laboratory methods have permitted the detection of pathologic physiology, in many instances long before organic changes in the tissue can be demonstrated. A striking instance of this is the persistent hyperchlorhydria manifested curiously enough by a persistently painful tongue. Undoubtedly a glossopharyngeal neuritis caused by the hyperchlorhydria. This pain disappears magically upon the alkalinization or neutralization of the stomach contents. An illustrative case is that of a dentist who suffered severely with a pain in his tongue. Nothing else was complained of. Analysis of his stomach contents revealed a high degree of hyperchlorhydia. He was put on medical management but later developed an ulcer of the pylorus which in the process of healing produced a stenosis requiring gastro-enterostomy. In this case the disturbed chemism of the stomach was the signal symptom of the disease and was purely physiologic in character at that time.

Everyone is familiar with the vague symptoms of indigestion caused by early physiologic disturbances along the gastro-intestinal tract. Infection or the presence of calculi in the gall bladder are manifested by bloating and by eructations of gas after eating. The patient complains that he cannot eat a full meal because of the

distress caused by the distention consequent upon the fermentation of food.

Chronic infections of the appendix not only cause a disturbance in intestinal digestion but constitute a common cause of constipation because of the spastic state of the bowel resulting from the pain.

If we were sufficiently advanced in the science and art of diagnosis, it is highly probable that we could perceive in every sign and symptom the result of some physiologic or histologic departure from the normal. Putting this postulate in another form it would be possible to say, this sign or this symptom is present because of this pathologic change. Further than this, it is possible to say that the order of the symptoms is constant and when that order varies, there is every reason to doubt the correctness of the diagnosis.

The classic sequence of symptoms in acute appendicitis may be cited. In this condition the order of symptoms is pain, nausea and vomiting, elevation of temperature and localized tenderness. The initial pain is caused by the distention of the appendix and is relieved by the discharge of the contents of the appendix into the lumen of the cecum, rupture or gangrene. The nausea and vomiting are reflex in character and are a measure of the severity of the pain.

It is often possible to determine accurately the degree of pain in a given case. Personal experience proves that every event connected with any crisis in our lives stands out vividly in retrospection. The location, the surroundings and the exact time of day are very frequently indelibly impressed upon the mind. So it is with pain. When the attack is sudden, agonizing and unendurable, every event leading up to the climax is clearly fixed in the memory. Crile in his beautiful monograph, entitled "A Mechanistic Theory of Peace and War" has shown by human and animal experimentation that the shock incident to great pain produces actual changes in the brain tissue. The cortical cells are shrunken, lose their chromatin and normal staining characteristics and undergo changes in morphology. Is it to be wondered at then, that under the influence of the almost lethal pain of perforated gastric ulcer or acute pancreatitis that the patient has literally "engraved upon the tablets of his memory" every event coincident with the attack. This fact is of the utmost value to the clinician in enabling him to determine almost the very hour of the beginning of the pathologic process.

The fever is due to the absorption of the products of infection and is always secondary to the pain and nausea and vomiting. It is placed third in order because of the lapse of time necessary for sufficient absorption to take place to produce a rise in temperature. Generally speaking, the degree of temperature is dependent upon the amount of tension under which the infective material is held and the virulence of the invading organism.

The localized tenderness is due to the irritation of the sensory nerve endings in the parietal peritoneum or localized peritonitis. When the fever precedes the pain the diagnosis of appendicitis must be in doubt. This frequently happens in typhoid fever with an ulcer within the appendix. Likewise when the abdominal pain is preceded by a chilly sensation or by an actual rigor, it is necessary to rule out a beginning pneumonia, pleurisy or pericarditis before making a diagnosis of an acute abdominal crisis. If one will follow this rule many embarrassing mistakes in diagnosis may be avoided as the following case illustrates.

A middle aged man was seen on the operating table just before the anesthetic was to be started. The history elicited that 24 hours previously the patient had had a distinct chill although not reaching the severity of an actual rigor. This was followed by the typical sequence of symptoms of appendicitis above given. His medical attendant had made a careful examination of the chest without finding anything. A similar examination by the surgeon was equally fruitless. Because of the history of a chill the patient was asked to expectorate and coughed up the typical rusty sputum of pneumonia. He died three weeks later of his pneumonia without operation.

We are all familiar with the hunger pain of ulcer of the stomach or duodenum. The history of disturbed physiology of the stomach manifested by hyperchlorhydria is as typical as the hunger pain. While there is some dispute as to the cause of this pain, it seems probable that it is caused by the irritating gastric juice flowing over the denuded area of the ulcer, because

when the acid is engaged by food or neutralized by alkalies, the pain stops.

Should the ulcer perforate, it is signalized by sudden agonizing pain caused by the corrosive action of the gastric juice flowing over the sensitive peritoneum. It is followed by nausea and vomiting—the vomitus occasionally containing blood, and by board like rigidity of the entire abdomen. The shock which is practically always present is due to the severity of the pain. Recent investigators have stressed the importance of demonstrating air in the peritoneal cavity by flouroscopic examination. From an academic standpoint this is interesting but not necessary to make the diagnosis.

Acute hemorrhagic pancreatitis has every symptom in common with perforated ulcer except that their intensity is greater. In this condition the release of the intensely irritating ferments of the pancreatic juice (trypsin, steapsin and amylopsin) upon the peritoneum causes the unbearable pain. The myriad areas of fat necrosis observed at operation sustain the diagnosis.

In biliary colic the pain is caused by the ragged stone in transit through a duct too narrow to easily transmit it. Frequently the pain begins abruptly as the stone enters the duct and terminates as quickly when the stone is extruded into the large lumen of the bowel. The radiation of the pain to the back and to the angle of the right scapula is explained upon anatomic grounds. The terminal sensory nerve filaments of the intercostal nerves communicating with the sensory sympathetic of the parietal peritoneum, provide the pathway for the painful impulse to the right scapular area. The nausea and vomiting secondary to the pain is an index of its severity and is reflex in character.

The sensitiveness at the tip of the ninth right costal cartilage is due to the distended and inflamed gall bladder coming in contact with the palpating finger of the examiner. Temperature is not observed except in the presence of a severe infection such as an empyema of the gall bladder and is then due to the absorption of septic products. Visualization of the gall bladder and functional liver tests may be an aid to diagnosis but do not supplant the physical examination.

In ileus, a comprehensive term including mechanical, dynamic and adynamic forms, the symptoms follow the definite order of pain caused by the arrest of the violent peristalsis at the point of obstruction, usually manifested by a mass in strangulated hernia. Nausea and vomiting, at first reflex, then mechanical due to reversed peristalsis and lastly toxic, due to suppurative peritonitis. Distention due to paralysis of peristalsis and obstruction to the escape of gas and feces. Finally elevation of temperature due to the absorption of septic products from the gangrenous area.

Should temperature occur soon after the onset of pain in strangulated hernia, the presence of an acutely inflamed appendix in the hernial sac must be suspected because gangrene of the bowel wall with the ensuing local peritonitis requires from twelve to twenty-four hours to develop. As a practical working rule, fever should always be regarded as an index of the absorption of the products of infection. The well meant attempts to explain a rise in temperature following operation upon a clean case, upon the basis that the patient has had too many visitors or upon any other hypothesis is simply refusing to face the facts. It is probably true that every clean abdominal case has a slight rise in temperature, post operatively due to the absorption of fibrin ferment. This is negligible however, and soon drops to normal.

In spastic ileus due to pneumonia, pleurisy and pericarditis, errors in diagnosis will often be avoided by remembering that the causal lesion begins with a chill which is never the case with mechanical ileus.

The following case is illustrative of spastic ileus caused by lower lobe pneumonia. A young man, coming home for the holidays had a chill in his berth on the sleeper. On arriving home his physician made a diagnosis of influenza. During the next forty-eight hours every attempt was made to evacuate his bowels but without success. Accordingly a diagnosis of ileus of unknown origin was made and immediate operation advised. The surgeon elicited the history of the chill and on careful physical examination was able to detect a small area of consolidation with crepitant râles over the lower lobe posteriorety. Morphin moved the bowels. The following clinical course was typical of lobar pneumonia.

Likewise in the ileus of tabes, the history of

lightning pains, the classic gait, the Argyll-Robertson pupil, the Rhomberg symptom and absence of patellar reflexes with testicular anesthesia will prevent an embarrassing operation, if borne in mind by the examiner. A case was sent to the hospital for immediate operation with the diagnosis of acute intestinal obstruction. No bowel movement for a week with pain, nausea and vomiting, tympany and inability to move bowels. W.B.C. 30000. The discovery of the classic signs of tabes prevented operation and free evacuation of the bowels followed the administration of ½ grain of morphin.

In salpingitis the history of dysmenorrhea, vaginal discharge and smear combined with pain low down in the abdomen, nausea and vomiting, fever and the palpation of a painful mass in the cul-de-sac or on either side of the uterus is practically pathognomonic.

Ruptured tubal pregnancy usually gives a history of one or two periods skipped or perhaps an insignificant amount of bleeding at the regular times, sudden agonizing pain on one or the other side of abdomen, followed by the symptoms of hemorrhage. Vaginal examination reveals a tender mass at one side of the uterus.

Renal colic is caused by the attempt to pass a calculus through the ureter. There is frequently a history of sedentary living with heavy eating and scanty acid urine with high specific gravity. The gouty diathesis is common with tophi in the ears. The pain frequently begins in the inguinal region and radiates down the inner side of the limb due to the anatomic distribution of the genito-crural and internal saphenous nerves. The pain is accompanied by strangury, that is an imperative inclination to urinate with the passage perhaps of a few drops of bloody urine. The x-ray with shadow catheter or pyelogram will often assist in making the diagnosis. There is no elevation of temperature because there is no absorption of septic products.

In Dietl's crisis the disturbed physiology of the kidney function is observed in the marked variance in the amount of urine excreted. In this condition the pain is caused by the distention of the pelvis of the kidney by the kinking of the ureter resulting from an obstruction to the flow of urine. In the presence of what appears to be an acute abdomen the examiner must always bear in mind the danger of overlooking some condition above the diaphragm which may exactly simulate some well known condition in the abdomen.

The insistence of clear and exact information as to the precise manner in which the attack came on, the previous history and the correct sequence of symptoms interpreted in the light of their underlying pathology will in most cases permit the examiner to make a correct diagnosis.

The homely methods of bedside examination have lost none of their value although some of the most trustworthy have been lost sight of, (especially by the younger men) in the rapid development of more complicated laboratory methods. For instance, the ability to obtain rusty sputum in a doubtful case is more valuable than any amount of laboratory research. It clinches the diagnosis at once and immediately throws out of consideration any idea of surgery. During the last ten years I have made it a point to ask each class which I have met, whether the necessity of a search for rusty sputum in cases beginning with a chill had been impressed upon them and in every case it was news to them.

I am not trying to belittle the importance of laboratory research as a diagnostic aid, but I am convinced that the present trend of medical teaching is to put the load upon the laboratory rather than to emphasize the importance of the history and clinical examination.

Strangely enough, pulmonary tuberculosis is commonly overlooked as a cause of acute abdominal pain and a tragedy follows abdominal section and an attempt to remove a tuberculous apepndix or other focus. Here, as in the lungs or joints, the secondary infection is the dreaded complication. In pulmonary tuberculosis, the patient with merely an area of consolidation enjoys reasonably good health. It is conceded that he has a slight daily temperature, cough, with some loss of weight and strength. Suddenly, without apparent cause the patient becomes markedly worse, with high afternoon fever, drenching night sweats, rapid loss of weight and strength. It is at this time that the secondary infection of the caseated area occurs. The digestive action of the pus producing organisms digests and liquifies the bloodless focus of caseation with resulting cavity formation. From this collection of pus there is rapid absorption with

the symptoms of sepsis already described. Under these conditions the tubercle laden sputum is usually profuse. Despite every effort of the patient it is unavoidable that he must swallow some of this sputum. The invading organisms are carried rapidly through the stomach and upper reaches of the small bowel until they find the sluggish current of the lower ileum, cecum and appendix, where they are precipitated. The rich lymphoid tissue of this area provides fertile soil for the growth and rapid propagation of the pathogenic flora. Under these conditions the patient may experience an attack of what appears to be a typical acute appendicitis and a mass may be felt in the region of the cecum. Such a case should not be subjected to operation except in the very last extremity because the removal of a tuberculous appendix opens up the avenue for secondary pus infection by adding the colon bacillus and a condition results analagous to the pulmonary cavity. It will be found that the abdominal incision will open up after a week or ten days and as long as the patient lives the surgeon will have the painful experience of looking down into a large crater-like opening which resists every attempt at healing. How can these cases be recognized before operation?

In the presence of a frank pulmonary tuberculosis it is not at all difficult to recognize the connection as the following case illustrates.

The surgeon was summoned to the hospital to perform an emergency appendectomy. The symptoms were classic and a mass could be palpated in the region of the cecum. The patient was thin and coughed up an abundant thick yellow sputum at frequent intervals. There was a bright pink spot on each cheek and the respirations were rapid, accompanied by nasal dilatation. As she lay in bed, she presented a typical picture of advanced pulmonary tuberculosis. Examination of the lungs revealed a large cavity in one and extensive consolidation of the other. She died three months later without operation.

Without frank lung findings the detection of intestinal tuberculosis with attacks simulating appendicitis may be impossible until the abdomen is opened. The diagnosis can then usually be made by the presence of the tubercles upon the peritoneum and the greatly thickened cecum together with enlarged mesenteric glands. Under these circumstances it is usually better to immediately close the abdominal wound than to run the risk of secondary infection which is almost always fatal in this type of case.

The purpose of this short consideration of abdominal pain is to emphasize the very great importance of an accurate clinical history, together with the symptoms in the exact order of their occurrence, interpreted in the light of the underlying pathologic physiology and histology.

25 E. Washington St.

TEACH CHILDREN CLEAR SPEECH IN EARLY YEARS

Many a baby who is encouraged to continue baby talk grows up into a child with a speech defect, Calvin T. Ryan, professor of English in a midwestern college, warns parents, grandparents, devoted aunts and uncles and mere friends in the June Hygeia.

The time to make a clear and beautiful speaker of a child is during the first years of his life. The kindergarten teacher can teach more good English to children than the university professor can later on, for habits of speech are formed before one reaches the university, Mr. Ryan reminds those who have children in their care.

Parents and playmates are the first teachers and the first models that a child has. If they use clear, pleasing speech, the child will acquire good speech habits and retain them through life.

Americans are called a lip-lazy people, with the speaker who can be easily heard and readily understood the exception rather than the rule, says Mr. Ryan, and if this accusation is to be lived down the process must be started by mothers, insisted on by kindergarten teachers and required by university professors.

Marriages

George M. Borin, Bartonville, Ill., to Miss Jessie McGhee of Peoria, August 5.

Grover C. Goodwin, Rankin, Ill., to Miss Mildred Bjurustrom of Gays, in Pittsfield, June 28.

Edward M. Harrington to Miss Edith Edwards, both of Chicago, July 17.

Personals

Dr. Walter R. Fischer, Chicago, addressed the McHenry County Medical Society, August 5, on "Foot Deformities — Etiology, Prevention and Treatment," at Woodstock.

Dr. Edmund Andrews, Chicago, will address the Alexander County Medical Society at Cairo,

September 19, on "Diagnosis and Treatment of Gallbladder Diseases."

It is reported that Dr. James L. Smith, Chicago, has been appointed by Governor Emmerson as superintendent of the Illinois Eye, Ear and Throat Hospital to succeed Dr. Leo Steiner.

On Tuesday, July 29, Dr. Joseph Greengard gave the first of a series of weekly health programs at the Chicago Commons.

At the annual meeting of the Medical Women's Club of Chicago, recently, Dr. Petra M. Dahl was elected president; Dr. Goldye L. Hoffman, president-elect, and Dr. Elizabeth H. Schirmer, secretary.

The Franklin County Medical Society was addressed recently by Drs. Clark E. Baker, Marion, and William G. Parker, Mount Vernon, on "The Chemistry of Metabolism" and "Some Aspects of Allergy," respectively.

Dr. William F. Reasner, formerly of the Northwest Branch, is now District Health Officer of the Santa Monica District Health and Welfare Center, Santa Monica, California.

Dr. John R. Harger spoke at the Elgin State Hospital, August 21, on "Thyrotoxicosis in the Mental Patient."

Dr. Goldye Hoffman addressed the Mother's Club at Chicago Commons on August 26.

Dr. Lucius H. Zeuch is going to Rome to attend the International Congress of Medical Historians which will meet in September. Dr. Zeuch is to give a talk before the Congress on Illinois Pioneers of Medicine. Dr. Zeuch is the author of Volume One of The History of Medical Practice in Illinois.

Six doctors have been appointed by Governor Emmerson as members of the Child Welfare Commission. They are: Drs. R. R. Ferguson, Chicago; James H. Hutton, Chicago; John R. Neal, Springfield; Mather Pfeiffenberger, Alton; Benjamin Baird, Galesburg, and Grover Otrich, Belleville.

News Notes

—Steps have been taken by the health department against the spread of anthrax germs. One case has been reported and investigators traced the origin to a cheap shaving brush. This is the first case of anthrax reported here in five years, according to health department records. From 1920 to 1925, thirteen cases developed and several deaths followed. The present case occurred in the Niles Center truck farming district.

—*Science* states that plans are being made at Northwestern University for a hospital at Chicago Avenue and Fairbanks Court which is said to be the culmination of more than eight years of negotiation for the complete reaffiliation of Wesley Memorial Hospital and Northwestern University. The main building will be eighteen stories high, having a tower which will extend twelve more stories, and will cost $5,000,000. It will have 600 beds. Its clinics, together with the facilities provided by Passavant Hospital, will form a complete medical center on McKinlock campus, capable of caring for nearly 1,000 patients. The new hospital will be largely devoted to patients from salaried and wage-earning families.

—According to Dr. Andy Hall, state health director, the state faces a new hazard from malaria. From epidemic foci previously free from the disease, case reports during July already exceed the prevalence of the total reported in that month of any previous year for more than a decade. During the first three weeks of July, 1930, seventy-nine cases were reported as against twenty-one for the whole of the month of July, 1929. In central Illinois, most of the cases have occurred among boys attending summer camps and tents along rivers and streams. Mosquitoes are manifestly becoming widely infected with malaria, Dr. Hall said. This situation exposes to malaria every person who is bitten by an infected mosquito.

—Mr. Max Epstein has subscribed $50,000 through the University of Chicago to the Provident Hospital and Training School for the establishment of an outpatient department to be known as the Max Epstein Clinic of the Provident Hospital. Dr. Joseph B. DeLee has pledged $10,000 for the purpose of naming the lecture room of the department of gynecology and obstetrics at the Lying-In Hospital in memory of his mother, Dora DeLee. Dr. Edward J. Van Liere, Morgantown, W. Va., endowed a research fellowship in memory of his deceased wife to be

awarded to a student of medical science in the department of physiology recommended by Dr. Anton J. Carlson. The Julius Rosenwald Fund has awarded a fellowship of $3,000 to Dr. Franz Alexander of Berlin to enable him to serve as visiting professor of abnormal psychology or psychiatry in the department of medicine. The medical library fund has been given $2,683.50 for the purchase of the Ahlfeld library in gynecology and obstetrics. For research the following grants have been received: $1,200 from the Anasarcin Chemical Company, Winchester, Tenn., for a fellowship in the department of pharmacology for study of squill compounds; $5,000 from the Glycerin Producers' Association for glycerin research under the direction of Dr. Carlson; $1,000 from the General Electric X-Ray Corporation for research in diathermy in the department of physiology, and $9,400 from the National Research Council for studies in the physiologic chemistry of sex hormones under the direction of Fred C. Koch, Ph.D., of the department of physiologic chemistry.

—Suits are pending in the Sangamon circuit court to compel the director of the State Department of Registration and Education to appoint an osteopathic and a chiropractic examining board and to license without examination a group of chiropractors who claim that they were practicing when the medical practice act now in force was passed in 1923. The court has sustained demurrers filed by the state in each case, but has entered orders permitting the osteopath and the group of chiropractors to appeal to the supreme court. The osteopath and the group of chiropractors complain that the members of the board by which osteopaths and chiropractors are now examined are medical practitioners, who are not qualified to examine osteopathic and chiropractic applicants for licenses. The exemption from examination urged by the chiropractic group is based on the claim that medical practice acts, whenever they have been passed, have exempted from examination physicians practicing in Illinois at the time of the passage of the act and that similar exemptions have been made in favor of veterinarians, horseshoers, architects, structural engineers, midwives, embalmers, pharmacists, dentists, registered nurses, optometrists, barbers, beauty culturists and public accountants.

Deaths

James L. Aldrich, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1889; clinical assistant in pediatrics, Northwestern University Medical School; aged 73; died July 31.

James W. Dinsmore, Nebo, Ill.; St. Louis College of Physicians and Surgeons, 1896; aged 64; died, July 25, following a surgical operation in the Baptist Sanitarium in St. Louis.

Jeremiah William Ellis, Chicago; Rush Medical College, Chicago, 1897; served during the World War; aged 64; died, June 30, in the Passavant Hospital, of bronchopneumonia.

John Bernard Ellis, Chicago; Rush Medical College, Chicago, 1899; associate clinical professor of ophthalmology at his alma mater; on the staffs of the Presbyterian Hospital, St. Joseph's Hospital, and the Home for Destitute Crippled Children; aged 55; died suddenly, July 30, of coronary thrombosis.

Lyman Miles Ellis, Chicago; Jefferson Medical College of Philadelphia, 1893; aged 59; died, August 3, of angina pectoris.

Gustave H. C. Fricke, Park Ridge, Ill.; Rush Medical College, Chicago, 1869; aged 82; died, July 15, of senility.

John Martin Jacobs, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1887; Rush Medical College, Chicago, 1890! on the staff of the Augustana Hospital; aged 78; died, July 20, of myocarditis.

Lafayette D. McMichael, Chicago; Eclectic Medical College of Pennsylvania, Philadelphia, 1868; aged 91; died, July 5, of uremia and chronic prostatitis.

Earle C. Mitchell, Chicago; Chicago Medical School, 1920; on the staffs of the North Chicago Hospital and the Illinois Masonic Hospital; aged 49; died, April 7, of chronic myocarditis.

Samuel S. Nesbitt, Payson, Ill.; University of Buffalo (N. Y.) School of Medicine, 1867; aged 91; died, May 10, of chronic myocarditis.

Samuel Marion Parr, Carthage, Ill.; Keokuk Medical College, 1897; past president and secretary of Hancock County Medical Society; first president of Hancock County Tuberculosis and Health Association; active in insurance and fraternal affairs; aged 68; died, July 27, from the effects of cerebral hemorrhage occurring May 2 last.

Charles William Pfeiffer, Quincy, Ill.; Keokuk (Iowa) Medical College, 1902; formerly member of the city board of health; for many years on the staff of St. Mary's Hospital; aged 54; died, July 20, in the Barnes Hospital, St. Louis, of acute hepatitis.

William Jacob Rideout, Freeport, Ill.; Keokuk Medical College, 1892; a member of Illinois State Medical Society; a veteran of the World War; member of the Association of Military Surgeons of the United States; active in Red Cross and fraternal work; aged 61; died, July 27, of myocarditis.

James H. Watson, Woodlawn, Ill.; St. Louis College of Physicians and Surgeons, 1881; former member of the Illinois legislature; aged 84; died, August 4.

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